CREATION, PERFORMANCE, INTERACTION.

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ALISON GLOVER KOTIN

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Thesis submitted in partial fulfillment of the requirements for the degree of Master of Fine Arts and approved by MFA Design Review Board of the Massachusetts College of Art and Design, Boston.

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To explore the creative potential of interaction with dynamic media, I make participatory works that spark collaborative, unscripted performance and play. By creating tactile, motion-powered digital interfaces modeled on musical instruments, I hope to encourage a spirit of curiosity and experimentation, leading participants to reflect on the process of creation as they perform. These open-ended, interactive situations favor chance and ambiguity, adding a layer of metaphor or unexpected responsiveness to familiar objects and places.

In considering the nature of experience and performance, I gather lessons from the history of performance art, avant-garde musical composition, and studio arts pedagogy. Historically, "relational" performative artworks have sought to foster community and creativity by making spectators an integral part of a performance piece as it unfolds towards completion. Modern dynamic media objects have the potential to create experiences and outputs that are variable, personalized, and evolving over time, redefining the author's role and blurring the boundary between "user" and "designer."

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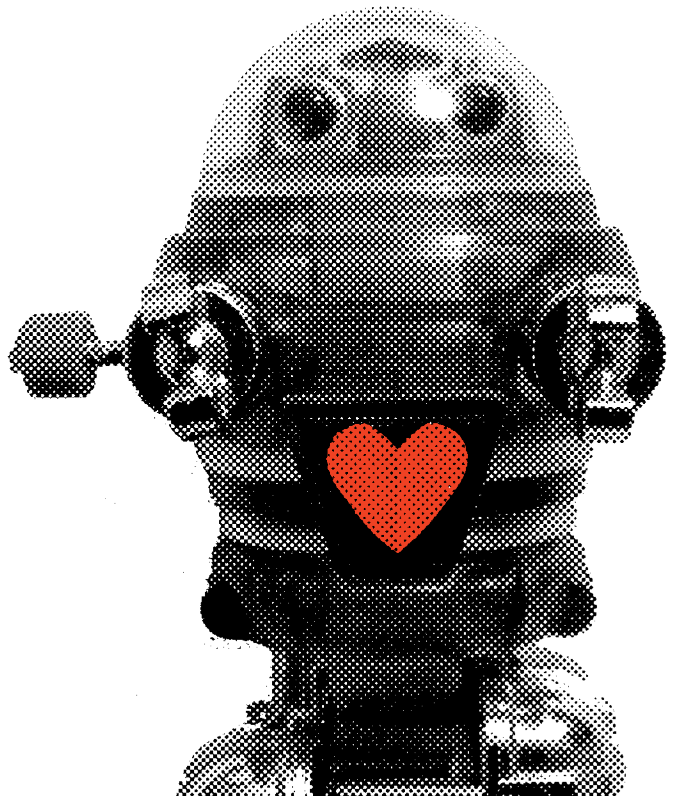

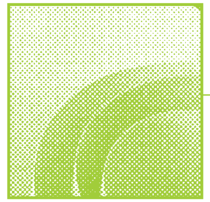

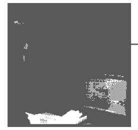
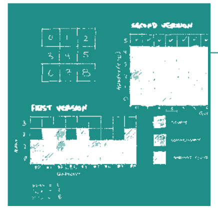
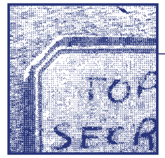
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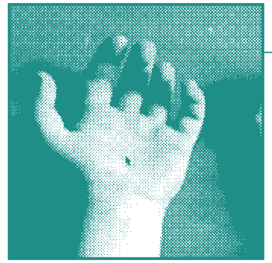
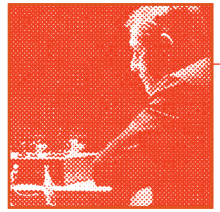
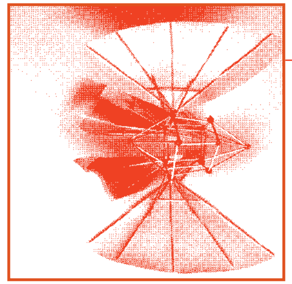







INTRODUCTION

Experiments

My path into the field of dynamic media has been guided by my fascination with the transmission of the tools and concepts of artistic creation from teacher to student, and from peer to peer. The more time I spend in the classroom (as a student or an instructor), the more I see my interest and attention shift away from the static final products of artists and designers towards the shifting, confusing, liminal state of "creative process." Work that is site-specific, temporal, participatory, and performative privileges the moments of creation or discovery that are most interesting to me. At the same time, this kind of work requires that I give up some control over the final outcome of a project, offering me instead an opportunity to join with my audience as we watch and attempt to steer how a piece will evolve and unfold.

I have been profoundly influenced by exercises I did while taking the School of the Museum of Fine Arts' *Art As Process* seminar as a new art student. Later I rediscovered this experience as a designer in *Design As Experience*, where I was able to leave behind my formal training and experiment with interactivity, performance, and above all the possibility of failure. While the final products of this work were ephemeral and at times seemingly unimportant, the experience of making whatever-it-was was imbued with a profound meaning. Both experiences raised questions all too familiar to artists and designers: "where do my ideas come from?" "how can I put myself into my work?" "why am I doing this?" I don't think it's possible for these questions to be answered finally, once and for all. I do think it's possible to answer them conditionally, for a time, for a particular situation. Each time they're answered we learn something, and the experience can be exhilarating.

My early projects at the DMI, particularly those that happened under the auspices of *Design as Experience*, were experiments in blurring the traditional roles of "maker" and "audience." With no expectations about the final manifestations of pieces like *Stranger, Acquaintance, Friend*, and *The Rope Project* I made my own actions and physical presence an integral part of the work, with final physical "artworks" remaining only as a testament to completed processes. Stepping onto unfamiliar ground, I invited my audience to enter the life of the piece at every stage of its creation, participating on equal footing with me.

During this period of experimentation, I wrote about *The Rope Project*: "Although I very much enjoy the challenge of these 'visual response to an object' assignments, I always struggle with a desire to create a response that will be completely unexpected and unique, a near-impossibility when working as part of a large group of creative people who have all received the same assignment! Consistently (and consistently to my surprise) the solutions I develop that include an element of performance, or performative audience participation, have been most successful in meeting this goal. I have found that a unique experience comes much more easily when I am able to find (or make) a framework in which my audience can become a part of the process of creation."

As my confidence with digital tools like Processing increased, I began to consider how this newfound pleasure in spontaneity and "performative audience participation" could become integral to my major projects at the DMI. The first of these projects, *Dream Sequence*, contains the rearranged and interactive story of my favorite recurring dream. This installation piece required me to think differently about my definition of "narrative," and to give up some of my attachment to linear plot in favor of a more poetic, mysterious, and disorganized content. To make visitors feel a sense of freedom and discovery despite pre-selected content deeply tied to my own authorial voice, I sought to create an invisible interface accessible through movement.

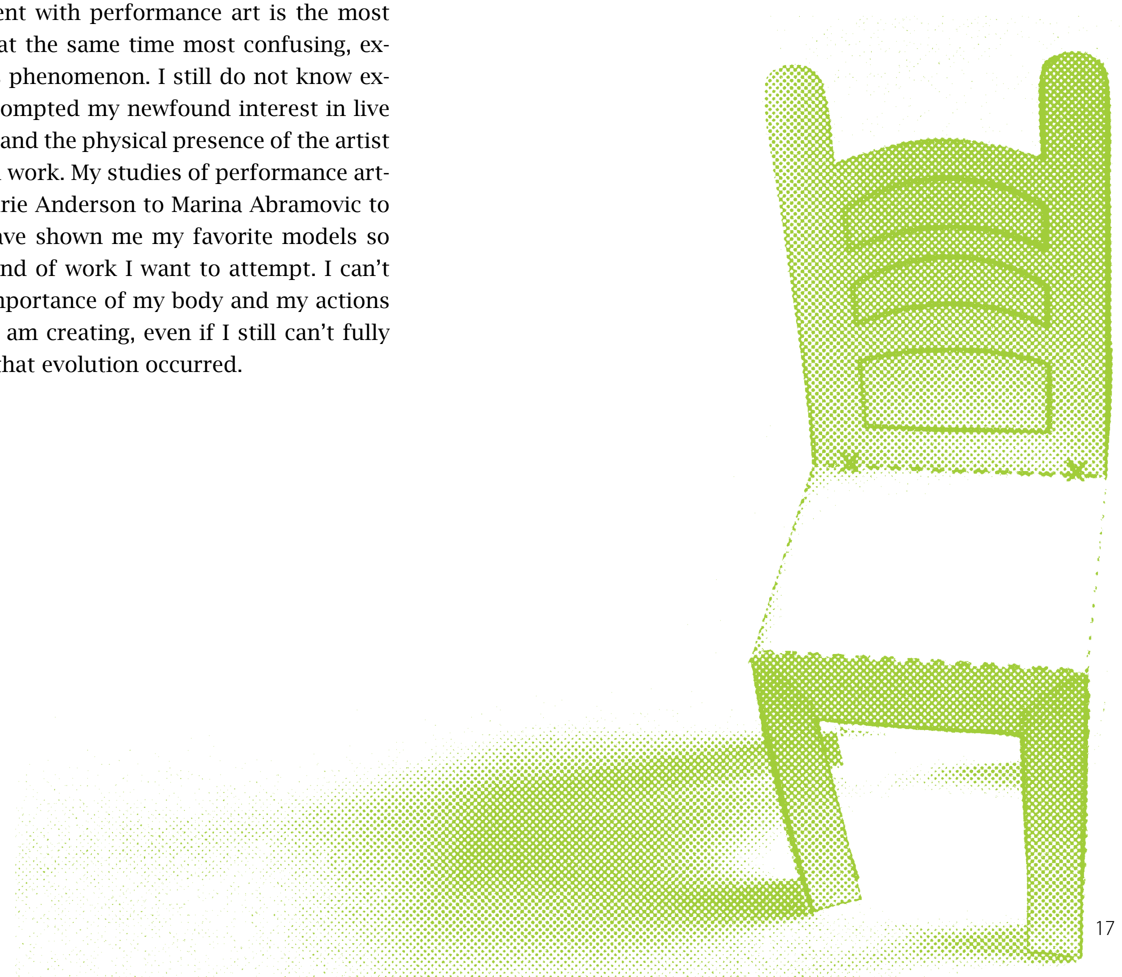
From *Design As Experience* on, my definition of "interactivity" shifted away from my initial expectation of websites with customizable interfaces and data-driven systems. Beginning with my early explorations of performance art in the Fall and Spring semesters of 2009 – 2010 I have steadily (if sometimes unconsciously) pursued a vision of "interactivity" that rests on collaboration between creator and audience.

Within my hybrid artist/designer's education, I have come to a deep appreciation of limitations as a buttress to the creative process. In daily situations from choosing a pair of socks to renting a movie, too much choice can be paralyzing – how much more daunting is a blank page or wall in the studio? I frequently find myself adrift in a sea of choices about a work's color, composition, content, and a host of other concerns. The first time I stared down that blank page as a designer, I was propelled forward by a beginner's earliest assignment. Something along the lines of "create 20 compositions, each one 4 x 4", using only black and white, and the following characters…" With the game board set up and the pieces in place, all that remained for me was to play. Within the limits of the scenario, my freedom felt absolute.

The success of this limited experience rested on a few factors: 1. I was willing to play along and accept the restrictions I was handed 2. The rules left me with some loophole through which I could pass to experiment with new ideas as they occurred, and 3. I knew that eventually an opportunity would come to look back on my play and evaluate it seriously as a creative enterprise. Mihaly Csikszentmihalyi defines "creativity" in a more global sense through a similar three-step rubric; "…Creativity results from…: a culture that contains symbolic rules, a person who brings novelty into the symbolic domain, and a field of experts who recognize and validate the innovation." Conflating my own experience with Csikszentmihalyi's formulation, I define the conditions for "creative experience" as a combination of limitation, experimentation, and reflection.

Can I direct audience members' engagement in the same way, creating a situation of limitation, experimentation, and reflection? What is being created by my user's actions, and what does she take away as the "content" of her experience? What motivates someone to take her experience seriously, especially when the interaction itself feels playful?

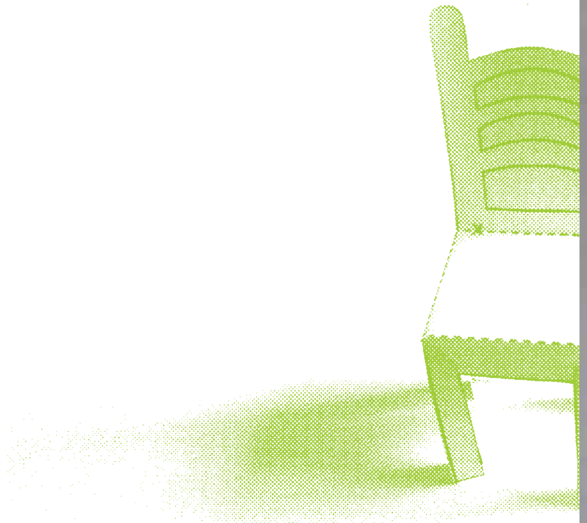
I have been continually surprised by my tendency at the DMI to gravitate towards approaches and media that previously made me deeply uncomfortable. My engagement with performance art is the most exciting, yet at the same time most confusing, example of this phenomenon. I still do not know exactly what prompted my newfound interest in live performance and the physical presence of the artist in time-based work. My studies of performance artists from Laurie Anderson to Marina Abramovic to John Cage have shown me my favorite models so far for the kind of work I want to attempt. I can't escape the importance of my body and my actions in the work I am creating, even if I still can't fully explain how that evolution occurred.



Performance

The performance art seminar I took at the School of the Museum of Fine Arts in the Spring of 2010 exposed me to artists who approach the medium as a loose framework within which to provoke responses from viewers, reactions, and interactions. I got my first hint of this process years ago when I read about a “micro-theater” troupe in Samuel R. Delany’s novel *Trouble on Triton*. For each performance, Delany’s micro-theater company (clearly based on the avant-garde “Happenings” of the 1970’s) sought out the smallest possible audience in the most unlikely places, staging performances in abandoned alleys for unsuspecting audiences of one or two spectators. When the creator/ viewer ratio is skewed to such a great extent, the necessity of the audience’s attention and engagement cannot be ignored. The audience of one holds within herself the capacity to record, remember, and authenticate a work’s very existence (Delany, 1996).

This model of performance shows me what I want from media: an opportunity to step outside of reality, create something new, and share that creation with others. I want to beguile my audience into using the tools I give them to make something new of their own devising. That new creation could be a sonata of great complexity played on sensors attached to my right arm, but it could also be the shaping of a performative interaction between the user and myself: a moment of intimate touch ritualized and staged for yet another audience of watchers. In the end, I want to transmit my own experience of creating an artistic work from the raw material of my interactions with the world around me to others. I want them to enter the work experiencing play, and leave with a sense that their input has created something of significance that was not previously present.



Me: So, in an ideal world, you'd rather have a more visual career too?

Google: "Taking the leap: building a career as a visual artist"

Me: I think it's a great idea! I was lucky my family and friends were so supportive.

Google: "In-Laws or Outlaws?"

Me: I did feel some pressure from my in-laws to pursue a more "lucrative" career.

Google: "The Costs and Benefits of Grad School"

Me: Sure - but can't you study online?

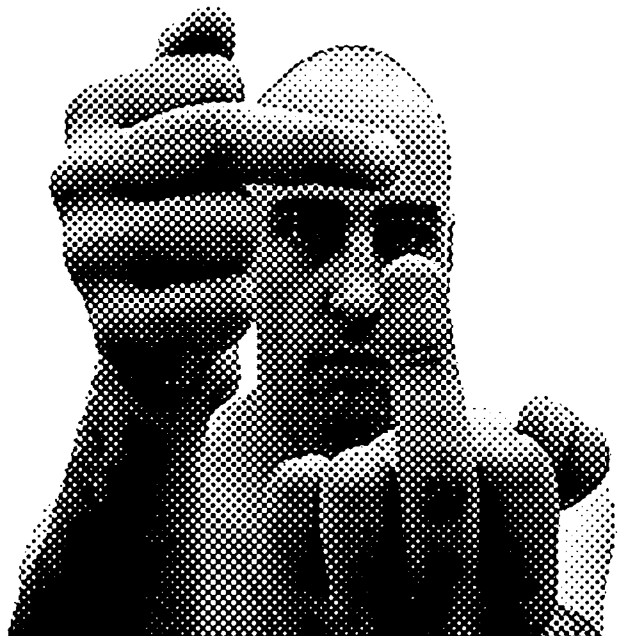
Google: "Are you really sure of your eternal salvation?"

Me: Well, no one knows for sure that grad school will be the answer to all their problems.

GoogleChat

I created *GoogleChat* for the 2009-10 performance art seminar I took at the School of the Museum of Fine Arts (*Contemporary Performance Theory and the Practice of Art* with Professor Tony Schwensen). *GoogleChat* was an attempt to explore (with help from my audience who provided a great deal of feedback) my relationship to the technology I use and take for granted every day. Working on the premise that the Google search engine represents a semi-sentient portal to a massive collective consciousness, I set out to determine whether the search engine and I could communicate. In front of a live audience, with my computer screen projected onto an opposite wall, I type questions into Google's search bar, and wait to receive an answer. The resulting "conversations" elucidated not only Google's biases towards particular types of information, but also my own unacknowledged assumptions about personhood and emotional response.

My early performance experiments in *Design As Experience* continued, with encouragement from SMFA performance professor Tony Schwensen, into *GoogleChat*. My experience with the Museum School Performance department was deeply uncomfortable, and eventually extremely rewarding. Cross-registering for a senior- and graduate-level Performance seminar at another school meant that I was dropped into the midst of a large group of advanced artists who had been working and taking classes together for sometimes as long as four years. They were equipped with a lexicon of performance jargon, a background of references to important past works, and most importantly a pretty thorough understanding of what it means to call oneself a "performance artist." My insecurity about performing anything at all for any kind of audience nicely augmented my long-term tendency towards diffidence in the face of expertise greater than my own, causing me to spend a few weeks early in the semester paralyzed with stage fright. I was saved by my feeling of obligation to be a "good student," which kept me doing my reading and coming back at 9:00am every week butterflies in the stomach or no. I was also propelled by the certainty that the weird stuff my fellow students were experimenting with (performers sloshing outside in the Fenway creeks, publicly preparing fried dough, and reading personal ads aloud over a PA system) was going to be really important to my conception of dynamic media's possibilities.



This is an old picture of Tony Schwensen which I have taken from the internet.

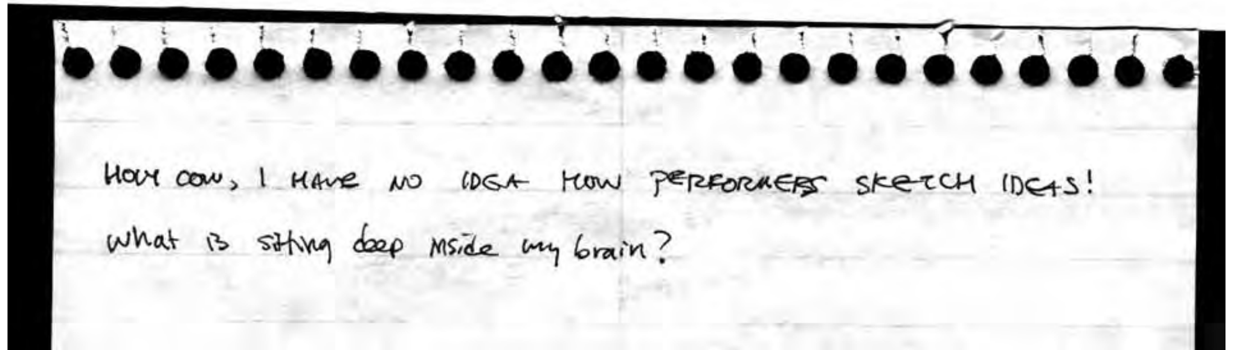
Abruptly, about two months before the end of the semester, Tony announced that he expected each of us to produce a solo performance piece as a final project for the class. "Go ahead," he commanded, "take 20 minutes right now to sketch!" I started writing in my notebook right away, in order to look busy: "Holy cow, I have no idea how performers 'sketch' ideas! Maybe··· what are my fears about how the group will react? 1. It's not sufficiently sophisticated. 2. There is some other research I should have done?"

Over a few lines, my internal monologue changed:

> "Maybe a conversation with Google? OK - is this a piece about ···loneliness? ···A desire to connect? ···Endurance (can I do this for 20 minutes?)
>
> Question: Does Google have a speaking voice? Is it me or the computer? What would it mean if I asked the questions and also recited the replies? Is my voice a monotone, or expressive? What do I look like? Am I physically present? How could the audience participate?"

Somewhere deep in my brain, I successfully transitioned from self-conscious paralysis to an artistic process remarkably similar to a designer sketching a new user interface. In the case of *GoogleChat* the interface to the work is me: my body, my voice, my actions. *GoogleChat* is conceptually all about interaction and my relationship to the data and interfaces of cyberspace, but the performance itself is a fairly passive experience for the audience, who are asked to take on the identity of eavesdroppers, listening in on my tête-à-tête with the computer. This is the terror of performance for me: I am the center of attention, no matter how I position my body and actions in relation to the audience. From this disconcerting position arises an uncomfortable but undeniable desire to push the experience farther, to meld my own performance with an opportunity for audience members to become participants in, rather than recipients of, the work.

Thanks!
Mari Novotny-Jones, Tony Schwensen, Lou suSi



DYNAMIC MEDIA / DYNAMIC SELF

Two young people meet by chance, and fall in love. The boy (let's call him "B") is from a poor family and without many prospects, but nevertheless he is ambitious and intelligent, and of course quite handsome. The girl (who I'll call "A") is an only child, the daughter and sole heir of an ancient and wealthy family. Her mother died when she was a baby, and her father (say, the Duke of "D"), devastated by the loss of his wife, dotes on his only child and keeps her sequestered from the outside world. Now another young man who I'll call the Count "C" enters the story. Brought up to a life of privilege, C has the noble birth and fortune to make him a fitting match for the beautiful A in the eyes of her father. As A knows only too well, however, C's wealthy upbringing and status have made him a spoiled and cynical young man, greedy and selfish. A yearns for a marriage of equals, a chance to pursue her own interests, and freedom from the imprisoning walls of the estate where she has lived her entire life. Duke D naturally disapproves of B's attachment to A, and forbids the young couple from meeting. Through various ruses the pair of lovers manages several clandestine meetings, even as A struggles to fend off the unwanted attentions of her sanctioned suitor C. One night, alerted by D of the possibility of A and B's immanent elopement, C discovers the couple together. Furious, Count C brandishes a sword and challenges B to a duel, and then···

A throws herself between the two men, and declares her love for B, whereupon···

A B C D

33 ● ② ③ ④

B draws his own sword and lunges toward C, taking him by surprise, but···

A B C D

34 ① ● ③ ④

C sidesteps and swings his blade viciously at B's unprotected side, as···

A B C D

35 ① ② ● ④

D runs towards them, calling his daughter's name, his voice full of fear because···

A B C D

36 ① ② ③ ●

A B C D

37 ① ② ③ ④

Dynamic Media

The year is 1991. I am weeks away from the end of 7th grade, a bookish almost-teenager taking a 2-hour standardized test. Bewildered by Mathematics, bored by Reading Comprehension and Analogies, my mind wanders and I begin to tell myself a fairytale about two young people who meet by chance, and fall in love. I imagine the beautiful A and her handsome friend B; the dastardly suitor, sneering Count C; and pitiable, doting old greybeard Duke D. With each answer bubble filled, the story advances, and the plot thickens. Sometimes my answers favor the star-crossed couple with a string of As and Bs, sometimes thwarting them with a run of Cs and Ds, strengthening C's unwelcome suit and D's fatherly disapproval. Because I am a good student, my sympathy with the romantic hero and heroine cannot influence my answers, so I am forced simply to watch the plot unfold as I work though quadratic equations and excerpts of the poems of Stephen Crane. Five years later, slogging through the SAT in my senior year of high school, A, B, C, and D were still with me, offering an escape from the fearful and tedious limbo of the test with their soap-operatic plotlines. This is how standardized testing provided me with my first taste of participatory narrative, limited system, and variable outcomes of a dynamic system.

So, what is dynamic media? I find no harm in defining half of the equation as simply as possible. For some object or experience to be called "media," in my opinion, it must to some degree rely on computers and/or other electronic devices. A more complex discussion of the history of media in society and the sociological impact of inventions from the printing press to the iPod introduces unnecessary nuance to the present discussion. As diverse as the work of Dynamic Media Institute students is, we all share a common reliance on the microchip and the electric socket. Allowing a simple answer to the first half the equation leaves the second open to more complex and personal interpretation.

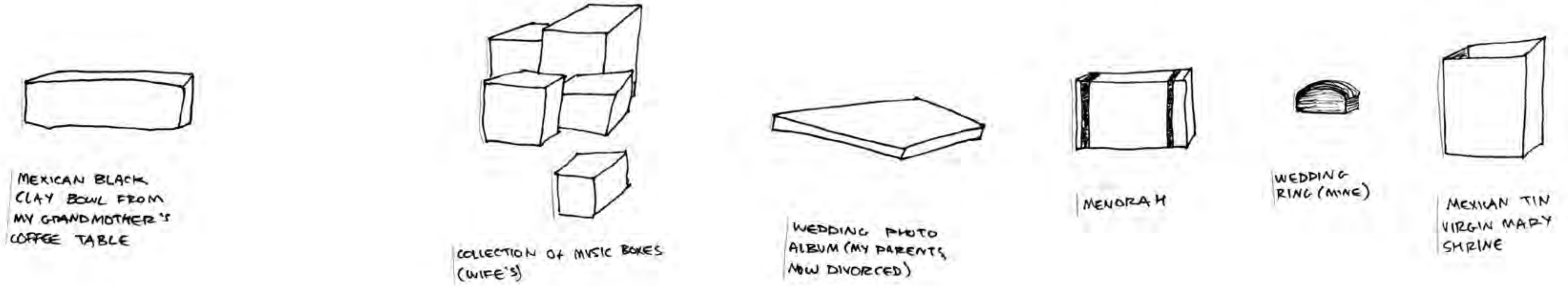
In my experience, the definition of "dynamic" media differs for everyone, and is not easily summed up in a catchphrase (although sometimes my fallback, "MassArt's graduate-level interaction design program," almost works). At the DMI, my work is all about offering audience members opportunities to play and create along with me. To turn my audience into participants, giving them components of stories I want to tell and then offering situations in which the most reasonable response is to interact and play along. To answer my own question then, I'll rename the medium, and call what I want to do "participatory" media.

Curator and art critic Nicholas Borriaud has this to say about the history of art: "[it] is the history of the production of relations with the world, as publicised (sic) by a class of objects and specific practices. Today, this history seems to have taken a new turn… Meetings, encounters, events, various types of collaboration between people, games, festivals, and places of conviviality, in a word all manner of encounter and relational invention thus represent, today, aesthetic objects likely to be looked at as such" (Bourriaud, 2002).

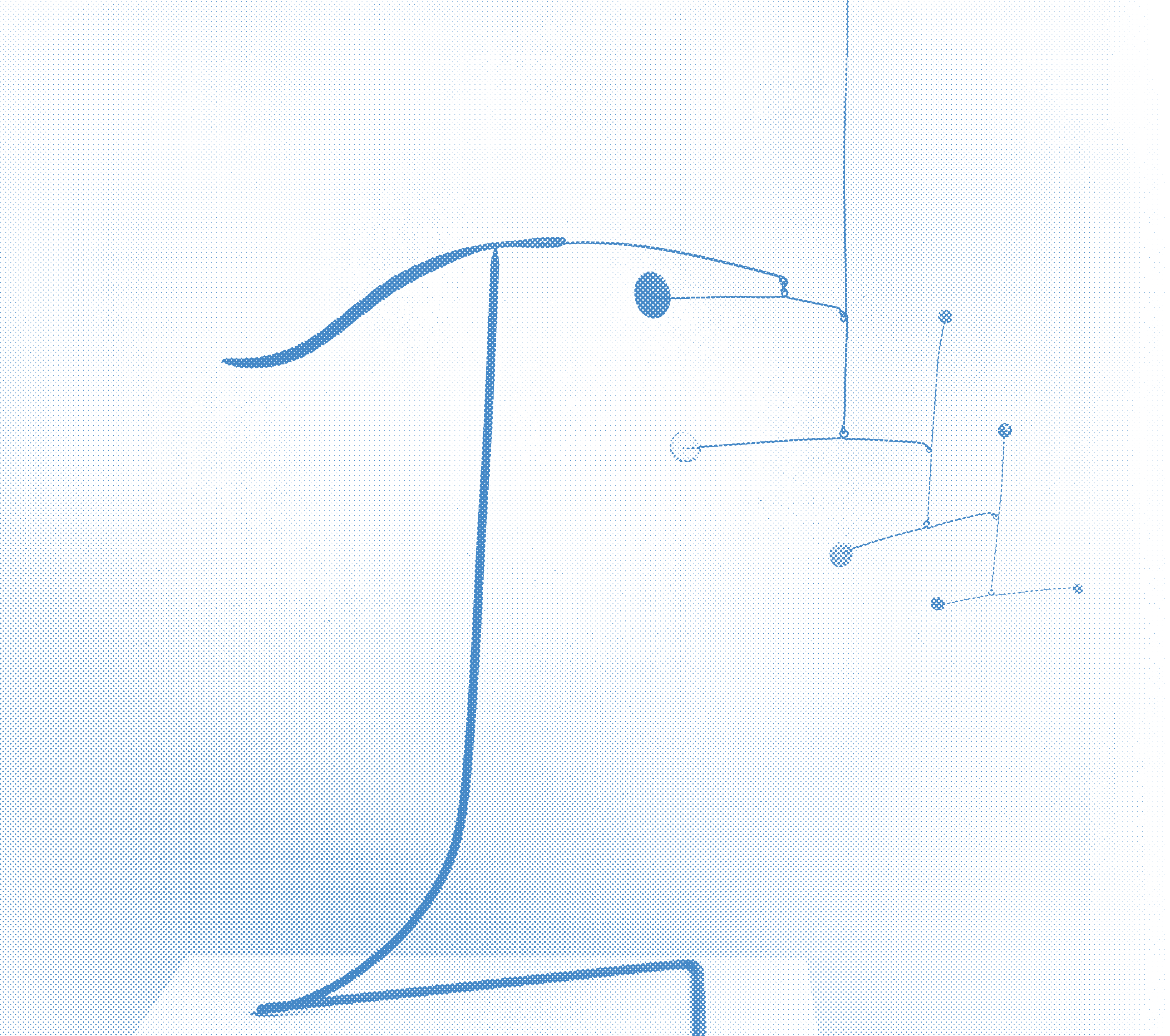
I want to use my work to create the "convivial spaces" that Borriaud describes. Over time I have observed that the artworks I remember best are the ones that invite this formation of relationships, among viewers and between a viewer and the artwork itself. And what are the foundations of a successful relationship? Trust, opportunities for self-discovery, and perhaps some mystery: the sense that you and your partner(s) are evolving together, changing, and becoming more complex. Tara Donovan's drinking cup and cellotape installations, Dadaist posters and chapbooks, Alexander Calder's hanging wire sculptures and mobiles, Cy Twombly's Greek mythology paintings, Joseph Cornell's shadowboxes, the Isabella Stewart Gardner Museum, and other works all provoke these feelings of fellowship in me.

None of these are precisely works of "participatory" media as I have defined it, but taken together they help me articulate what I want for viewers of my work: a sense of falling into a parallel universe, far larger than it appears; a feeling of hominess, familiarity, and ownership even when the subject is strange or obscure; a wild desire to emulate the creative process that produced the piece in the first place.

There exist a myriad of tools to foster Borriaud's relationships, but isn't this what dynamic media does well? Even a media product as simple as Tetris or online mini golf can evolve, respond to input, foster community, and reward patience and repeated engagement. A plethora of designers, inventors, and corporations have taken advantage of the capabilities of dynamic media to create tools and interfaces that provide either an unsatisfying simulacrum of lived, "analog" experience, or an alarming exploitation of the human propensities towards short attention, pleasure seeking, and communication without meaningful content.



Ode To Things (excerpt). Design As Experience, 2009.



Dynamic Self

BEGINNING

As a kid, my experience of media was limited to *The Wind in the Willows* on tape, *Wild World of Nature* on PBS, and, when my family finally got a VCR, repeated re-watchings of Disney's *Fantasia*. In middle school I invented board games with my younger brother Jack, built tiny houses and stitched minute clothing for stuffed animals and even smaller creatures, and made up fairytales with my friends about portals to other worlds. I was happiest and most comfortable when alone. I am naturally shy, but perhaps my old fashioned frame of reference for play, based in Mary Stewart's King Arthur series, Anne McCaffrey's *Dragonrider* books, *A Little Princess*, *The Secret Garden*, and innumerable installments of *Anne of Green Gables*, had something to do with it. My artist mother encouraged and helped with my many projects, and my grandmother taught me to sew doll's clothes and to bake. She also humored my fascination with her belongings, telling me stories of the "olden days" in which her pots, pans, spoons, and knickknacks originated. Every inanimate object I held had a story, a history, and its own personality, either ready-made or invented by myself.

My minimal childhood media interactions lead me to view mediatized experience as taking place on some magical, trans-dimensional plane, not exactly real, yet possessed of an undeniable physical impact. Violent movies still terrify me, and even the rudimentary set design and effects of sci-fi movies of the 1980's and 90's allow me to suspend disbelief and become immersed in the story. Repeated exposure never immunized me to the magic of new media experiences, and I am still captivated by technology and the delight of play inherent in many interactive interfaces. The more I learn about the inner workings of these tools, the more I can see how to turn them into containers for my own ideas.

Years of enjoyment of science fiction from *Ender's Game* to *The Diamond Age*, *Star Trek*, and *Stars in My Pockets Like Grains of Sand* have imbued the technological prototyping process with all the fun of telling a good story. It was for me a small step from reading these stories in books to reading, creating, and participating in them online. The bigger step of bringing those unpredictable, futuristic, half-magical scenarios into the world of concrete, physical experience feels akin to being offered a chance to beam up to the bridge of the *USS Enterprise.* None of the other art forms I have engaged with, however personally satisfying, have given me the same sense of discovering something unheard-of with each new idea. I seek a design practice that incorporates both my fascination with technology and the satisfaction of creating handmade objects with distinct texture, mass, and personality.

Despite all this, my most memorable experiences of authentic emotion and engagement spring form interactions with physical spaces and non-media objects. For me, these things speak in their own language, and by their very "passivity" (as opposed to interactivity) invite me to script their half of our imaginary dialogue. When I talk about "participatory" media I am not getting excited about a digital equivalent of *Choose Your Own Adventure* or even *Star Trek*'s holodeck. Instead, I am thinking back to the story of A, B, C, and D, a five-year experiment in world-building and storytelling that was made rich by my own imaginative contributions, constrained within a predetermined (though repurposed) framework.

I have never been fond of traditional "participatory" experiences. I dread being called up on stage during a performance, I find most interactive stories dull or frustrating, and I am most comfortable when interacting with only two or three people at a time. Many of my most pleasurable moments are enjoyed in near-solitude. As I have remarked elsewhere, however, my experience at DMI has been a process of realizing that the many things that make me uncomfortable, or put me off balance, are in fact the very elements that are most crucial to my work. To understand why performance, participation, and immersive environments have become so important to my work seems like the most direct route to understanding why participatory media has become my medium of choice. This is a question I can't completely answer now, and I suspect it will continually recur throughout my future artistic life. Why is work that feels uncomfortable and risky also the most important, and exciting? Every artist I know asks the same question, and most of them do not have a concise answer either.

Over the past three years I have become, initially unwillingly, a teacher. This was one of many career choices (along with stand-up comic and liontamer) that I have always sworn I would never, ever, consider. Each time I enter a classroom I feel a shiver of trepidation, painful self-consciousness, an awkward lack of authority, and a never-fully-suppressed urge to flee. My only explanation for why I continue to put myself in these situations is that I have come to love the experience of sharing what I know with others, and seeing what they will make with the tools I can give them. For me, performance and audience participation in my artistic work get at the same feeling of offering a questioning mind my own tools to see what new creation might emerge. My past "analog" artworks (drawings, prints, intricate paper sculptures) were a delight to create in the studio, but now feel dully familiar and blandly non-responsive compared to even my simplest pieces that are responsive to the input of others. The same giddy, stomach-dropping, cliff's edge feeling of standing in front of a class of students imbues my presentations of dynamic media work, the more so when my voice, actions, and body are physically present.

Early experiments with data visualization: buttons sorted into my grandmother's muffin tins.

EXPERIMENT | 2

Dream Sequence

"You know, seeing a film backward isn't the same experience as seeing it forward in reverse. It's a new experience, still happening forward in time. What falls out is all its own. Returning [to Earth] from the moon was not the same as going, played backward."

– *Dhalgren*, Samuel R. Delany (2001).

In my favorite recurring dream, I am near the sea, hiking towards the water. I know that just ahead is a spot on the beach I have seen before, a place to which I have always wanted to return. I know that it must be around the next bend, at the base of a cliff or over the dunes, but I never make it there before I wake up. I have always wondered whether I never find the place because it is in fact somewhere beyond death and my mind's ability to imagine, like Valhalla, Elysium, or Tír na NÓg. I wake from these dreams consumed by longing to return, and with a sense of déjà vu, of returning to a place I have visited before.

Dream Sequence is a room-sized, interactive sound installation, built around the story of a recurring dream. Multiple participants interact with the piece by moving naturally through the space. Visitors' movements, tracked and processed via an overhead webcam and blob-tracking software, trigger different parts of my dream narrative, meta-commentary on the meaning of the dream, and ambient sounds of the beach. Users experience a non-linear, overlapping web of sounds, details of which emerge as visitors move more slowly or more quickly around the space. Participants are rewarded for longer immersion in the installation by an evolving story, revealed over time.

During the second half of my first year at the DMI, I began to realize that my growing interest in "interactive narrative" was not in fact an interest in storytelling per se, but a first articulation of my desire to offer tools of creation to my audience. This shift required me to think differently about my definition of "narrative," and to give up some of my attachment to linear plot in favor of a more poetic, mysterious, and disorganized content. *Dream Sequence*, begun in the spring of 2010, retained some characteristics of traditional storytelling, but I intentionally chose and designed its content to be modular and open to many configurations or interpretations. Working with imagery from my dreams allowed me to cast off some of my previous assumptions about what makes a "good" story, and refocus my narrative on creating a particular atmosphere, inducing a specific mental and emotional state.

While I chose to limit users only to the story I wanted to tell, I did not want *Dream Sequence* to feel like a limited experience. I desired visitors to the piece to recreate for themselves my experience of a recurring dream. Action and outcome are linked, but the connection is obscure. Repeated, evolving elements of the story offer continuity, but also a sense of strangeness and unpredictable change. To make visitors feel a sense of freedom and discovery despite pre-selected content deeply tied to my own authorial voice, I sought to create an invisible interface accessible through movement. Visitors enter a seemingly empty room, and with every step through the space are able to trigger more and more of my story. There are no rules of interaction to learn, no instructions to follow. Instead, the movement and curiosity that we expect in a gallery setting drive the story's evolution. As they interact, users become aware that their own bodies are the control panel though which my "interface" flows, allowing them to access, reconfigure, and experience my story.

Works like *Dream Sequence* explore the approach of fostering creativity through strategically limited options for expression. With *Dream Sequence* I have a specific story I want to tell, a particular set of experiences I want to evoke. In the gallery I present polished and complete narrative material, but give up control over how and in what order that material reaches its audience. My goal for the installation of this piece was to focus visitors' attention on testing the limits of my system and experimenting with the effects of their interactions.

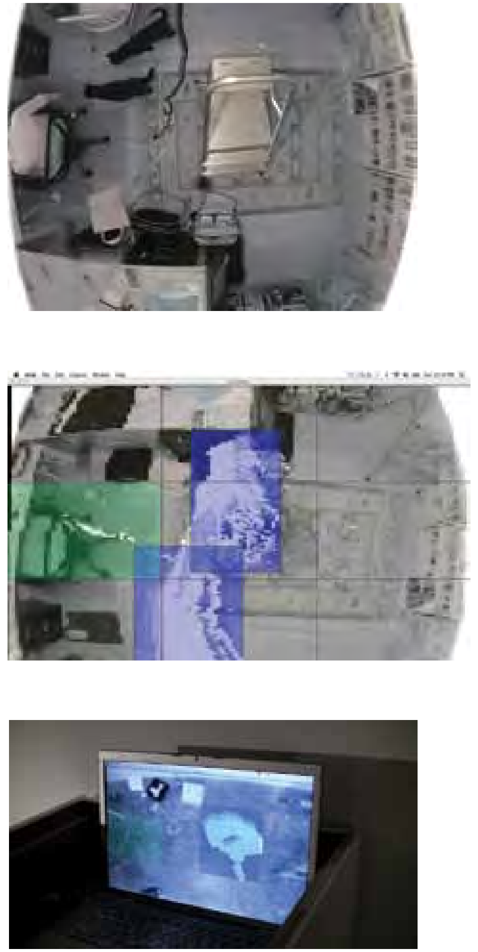
Dream Sequence was the first piece I created that I considered to be some form of musical instrument. Although I crafted the content of the dream story carefully, and hoped visitors would comprehend the plot, from the beginning I was delighted with the visceral experience of voices and sounds piling up to a cacophonous crescendo as more and more people entered the space. The rising and falling babble of voices that ensued from quick movements and large groups of people struck me as an interesting end in itself, with or without comprehensible words.

Sandy Point nature preserve, Newburyport, Massachusetts.

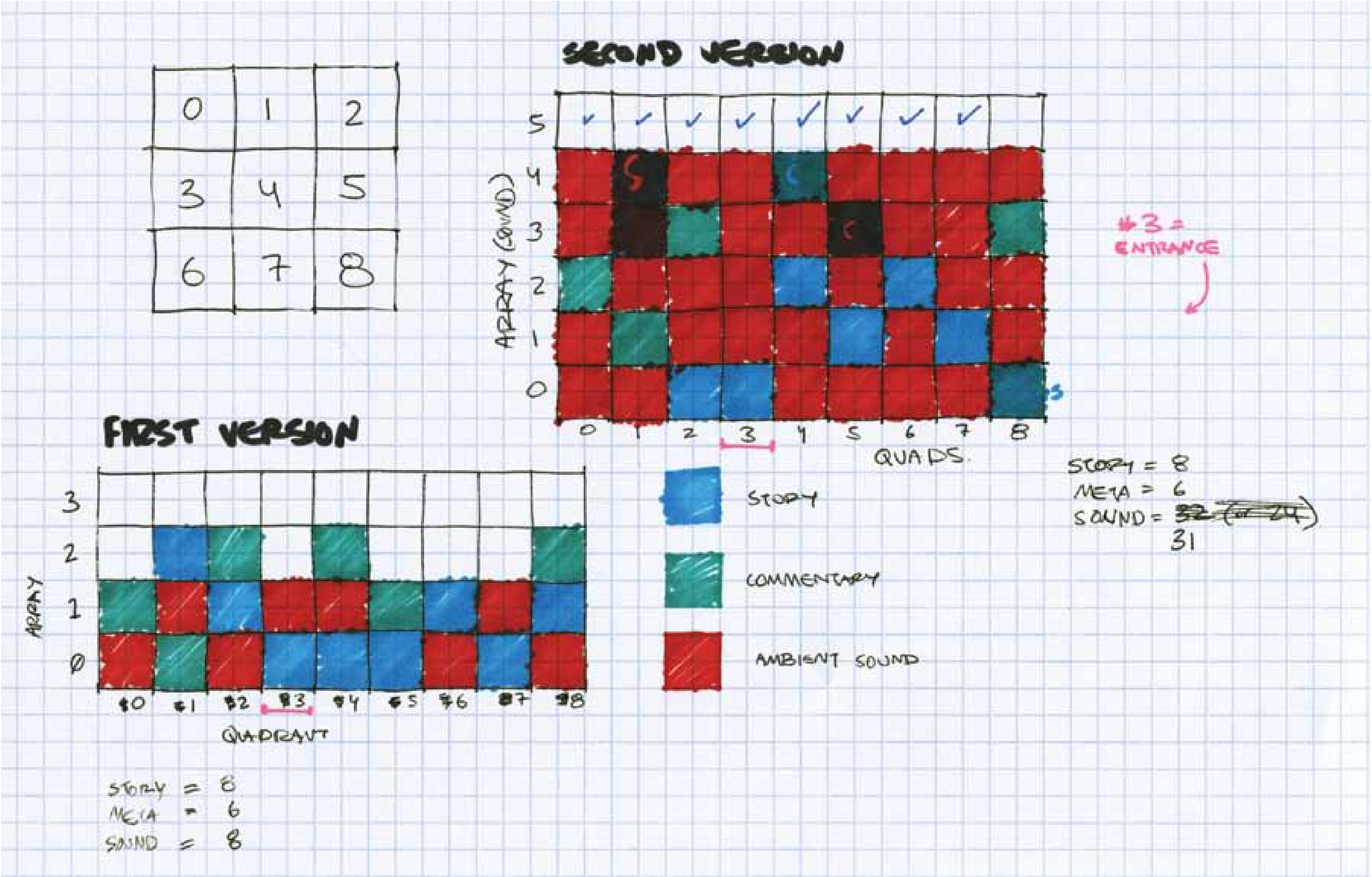
PILOT TESTS

The first test of *Dream Sequence* with more than one interactor took place in a relatively small, low-ceilinged room. The “active” space captured by the webcam on the ceiling was smaller than optimal, approximately 6 x 6 feet. When two people moved together in this tight space, sounds multiplied quickly, with the entire story triggered in a matter of moments. This confusion and density of sounds diluted the instant interaction/reaction I hoped to achieve, obscuring the connection between visitors’ movements and their sound consequences.

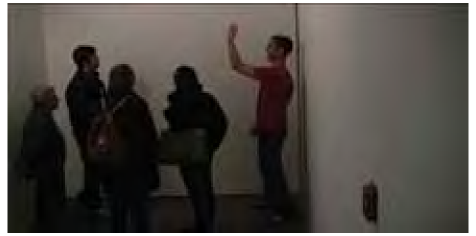
Anticipating the first large-scale installation of *Dream Sequence* (with a much larger audience), I modified the piece’s sound library to produce a more nuanced and “legible” sound output. Considering my pre-existing sounds and a map of the project space, I decided to “deepen” the arrays of sound that correspond to each quadrant of the active space. Now each array holds five sound files rather than the original two or three. Of those five sounds, only one or two are spoken words, while the rest are a subtle collection of ambient sounds collected at the beach: waves, footsteps on sand, distant gulls. These sounds overlap gracefully, producing a more nuanced sense of space and movement, while providing needed “breathing space” between narrative sections.

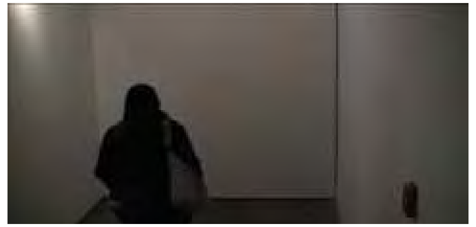


Webcam, blob tracking, gallery installation.



Sound schematic: layering story, commentary, and ambient sounds to create a harmonious experience.





Visitors in the Doran Gallery, 2010

IN VIVO

The first full-scale gallery installation of *Dream Sequence* took place during *Provocative Objects* (curated by Lou suSi and David Tamés) on November 12, 2010 in MassArt's Doran Gallery. The installation space was an alcove roughly 8 x 10 feet, enclosed on three sides (two sides were moveable walls). I attached the webcam to the ceiling, and was able to rest my laptop on a shelf inside one of the moveable walls. Small speakers were mounted on the wall opposite the entrance. This setup was very close to my vision of a space in which all technology is completely invisible. Visitors entered the space with the illusion that they were stepping into an empty room. This illusion was so powerful that I decided to place the gallery label for the piece below the speakers on the wall opposite the entrance to lure visitors into the installation.

Ambient noise from other sound installations during the show interfered with the clarity of sound output from *Dream Sequence*, but still an estimated 75-100 people entered and played within the work. From observations and conversations with visitors, it seemed that users were able to enjoy the aesthetics of the experience even without catching every word of the story. Some visitors seemed initially unaware of the sonic effects of their movements, while others made an elaborate game of trying to determine which movements would trigger sound. These playful gestures (at times resembling improvised dance) did not indicate a particularly deep concentration on the content of *Dream Sequence*'s narrative, but the spontaneous pleasure of users experimenting with movements and sound was nonetheless an important outcome of the installation.

The ambient sounds I added to the piece (seagulls, a distant foghorn, footsteps) were easily recognizable all over the gallery, even over the noise of the space. I loved hearing seagulls crying across the room over the sounds of conversation, knowing someone was inside *Dream Sequence*. One visitor remarked that he was especially struck by the sound of footsteps I included when the recorded steps unexpectedly synched up with his own movements.

The alcove where *Dream Sequence* was installed was one of the only "empty" spaces in the gallery. I noticed that groups of visitors would periodically retreat into the piece to talk quietly, their hand gestures triggering a story fragment from time to time. I don't know if these participants were fully aware of the piece that was unfolding around them, but I like to imagine the work as offering a place of refuge.

The Urbano Project's Teen Spoken Word Curators perform at the Massachusetts State House, 2011. Photo by Joel Veak.

THE FUTURE

I see *Dream Sequence* as a starting point for an ongoing exploration of space, movement, sound, and audience participation. The platform I created in Processing (relying heavily on the Flob motion-tracking library developed by André Sier) can be "filled" with any combination of sounds, and triggered by many kinds of movement. It is my hope to extend this platform in the future to create other kinds of sound environments, experimenting with different stories and non-narrative sounds. I am particularly interested in seeking public or non-gallery spaces for this installation, setting up opportunities for visitors to enter the piece by chance, sparking unscripted interactions.

In the spring of 2011 I will install *Where I Live*··· in the Urbano Project gallery in Jamaica Plain as part of the 2011 Boston CyberArts Festival. The Urbano Project "empowers urban teens, professional artists, and the community to effect social change through participatory works of art and performance." *Where I Live*··· is based on the sound and motion platform I created for *Dream Sequence*, and features the voices of over 30 high school students speaking about their neighborhoods, and the psychic effects of growing up in an urban environment.

Filling Urbano's gallery, *Where I Live*··· contains fragments of teens' stories of their neighborhoods as well as ambient city sounds collected by volunteers from sites around Boston. Users experience a non-linear, overlapping web of sounds, mimicking the complexity and unexpected moments of clarity inherent in a trip through the city. It is my hope that the dynamic sound environment of *Where I Live*··· will provide the high school students who partner with me a forum in which to speak powerfully together about their diverse experiences of the city of Boston. I hope this piece will be the first of many modifications and recyclings of the platform I created for *Dream Sequence*.

Thanks!

Jessica DeJesus	**Evan Karatzas**
Gunta Kaza	**Jan Kubasiewicz**
Colin Owens	**Lou sUsI**
David Tames	**Alex Wang**

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MIDDLE

I began to learn HTML in the late 1990's. Near the end of college, I was saturated with literary theory and dizzy with excitement over the simultaneously personal and political significance of reinventing my identity to my own specifications. In a writing seminar I learned Storyspace, software created in the 1980's to simplify the process of authoring interactive "hypertext narratives." Rather than the linear structure of a written page (or even the vertical "stacks" of Hypercard), Storyspace (a simple interface to HTML coding) was designed to facilitate the creation of densely woven, web like structures with nodes of content connected by links (Eastgate Systems). The underlying assumption of the Storyspace interface was that any work authored will reject traditional linearity in favor of data interconnected by relationships too complex to hold simultaneously in mind. This assumption, both liberating and intimidating (examples of similar narratives included canonical works from Jorge Luis Borghes' *Garden of Forking Paths* to Umberto Eco's *The Name of the Rose*) led me to question the essential components of a story, recombining photographs, poetry, maps, and sound files into hybrid works.

Working with Storyspace, I had the experience of finding that the media with which I interacted became a transparent window into a new, non-corporeal space. The branching narrative structures that Storyspace made visible encouraged me to see web-based writing as a space that an imagined body could enter and explore. As I became more adept with HTML and digital storytelling, the web became a space that I imagined could be navigated and constructed as well as interpreted and conceptualized. I created elaborate personal websites, casting myself in the role of a mysterious, ambiguously gendered emcee in ever-evolving galleries of curiosities ranging from the literary to the zoological. The online format allowed me to combine my writing with other kinds of artistic creation, taking me first unconsciously, then with greater intention, down a path of artistic study that eventually led to my current design career.

In experimenting with the creation of new identities and personae, I became conscious for the first time of an audience for whom I could create an experience. I imagined that the invisible audience of fellow web travelers interacting with my digital persona could be vast (although in reality it was likely modest). The unseen presence of visitors and users of my work led me to consider the impact of my words and images on strangers. The performative aspects of my roles took on greater significance, as did the possibility that visitors to my online spaces would not distinguish between my imagined virtual identities and the "real me." In creating an experience for users of my work, I was in some way altering reality, making myself in the eyes of others into many alternate selves. I was engaging in what Dewey terms an "aesthetic experience of making," channeling my own experiential narrative into artistic works that in turn created an experience for their viewers (Dewey, 1934).

My 1999 engagement with dynamic media was relatively unfiltered. I initially learned HTML and Storyspace and designed spaces for my online selves by laboriously typing tags in Simpletext, then uploading images and HTML pages via modem. The online world I inhabited had no guidelines for how to proceed, and conversely, very little support to make the design and updating process user-friendly. This meant that while technically my work was based on hit-or-miss experimentation, I was able to create narrative, image galleries, and virtual spaces without any significant influence from my online hosts. I was empowered by Storyspace and fictional cyberpunk heroes to conceive of the online realm as a world where I could build, dismantle, reconfigure, and discard puzzle-pieces of my creations that ranged from a virtual museum wing, to a labyrinth, to a visual autobiography, to a poetry anthology.

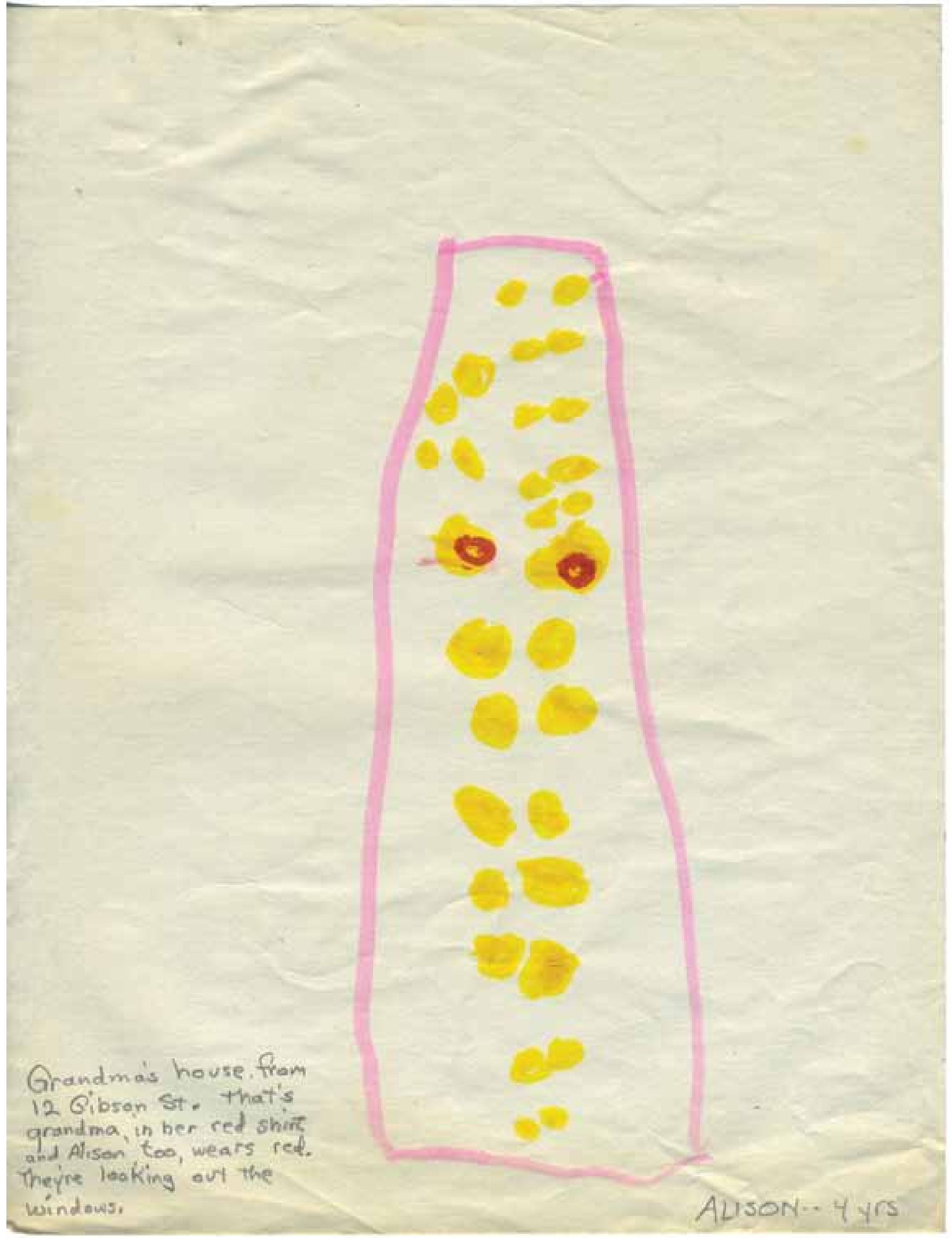
The Invisibles: Kissing Mister Quimper (Morrison, 2000).

CONTINUATION

My entry into online performance and artistic creation was a liberating and empowering experience. In 1999 I felt that my online experimentation with self-identity and persona was part of a larger movement of questioning the unacknowledged power structures of society. On a deeper emotional level, I felt that I had been given the chance to invent myself in the image of who I wished I were, with full acknowledgement that that persona could remain in a state of constant flux.

Through many iterations of personal websites and non-linear, web-based storytelling I began to see myself as an artist whose goals extended beyond self-discovery to the creation of new experiences for an anticipated audience. As my awareness of audience (and my technical skills) increased, I also gained self-confidence in the identity of "creator," an appellation flexible enough to contain the many contradictory parts of myself. This mental evolution let me separate myself from my work enough to allow for the "aesthetic experience" of artistic creation educator John Dewey describes: "to build up an experience that is coherent in perception while moving with constant change in its development" (Dewey, 1934). Rather than identifying my cyber-self with fictional characters, I could draw parallels between my real self and the authors whose works I read.

The experience of creating my digital personae, facilitated through HTML and Storyspace, took place over the course of several years. In retrospect, this was a time of rapid personal growth as well as technological evolution, a path of skill development and self-reflection that connects my current design practice and identity to my self of 12 years ago. As a reader whose childhood was defined by self-directed, imaginative play I want to create work that can spark others to play, and maybe create something new, with the tools I give them.



EXPERIMENT 3

Top Secret

Top Secret was born from an unexpected convergence of materials: an antique cigar box holds a collection of dream narratives that I recorded over nearly a year. When a visitor gently opens the wall-mounted cigar box, my voice whispers a dream story from a hidden speaker. Initially the piece contains 17 pre-recorded stories based on my dreams from March – October, 2010. Each visitor receives a different story upon opening the box — a phenomenon not immediately obvious to other audience members, as my whispering voice is intentionally played quietly. In order to catch my barely-audible words, visitors must bring their listening ear as close as possible to the box's opening, creating an intimate and private moment within a crowded space.

At the beginning of my second year at the DMI, I was given an assignment to "do something every day" for several weeks as an exercise in developing artistic process. I chose to record one dream per day, posting the short stories on Facebook for friends to enjoy. Since I didn't expect to have a memorable dream every night, I supplemented the list with past dreams "from the archives." I have always been a vivid dreamer. I know this because I clearly remember dreams from my very early childhood including a dream at age 6 or 7 of a secret door into my grandmother's apartment, which afterward I was convinced for years was real. I'm familiar with the bittersweet experience of waking up from a dream and feeling for a period (perhaps only moments, sometimes days) that it would be worth almost anything to get back into that world, slip back into some imaginary relationship, or see the end of the story. Sometimes my dreams are straightforward workings-out of daytime desires and anxieties, or slightly distorted reruns of recently read books or frequently watched TV shows, mixing and matching familiar characters and scenarios.

Sometimes I have dreams like this one:

> **4.16.10:** I dreamed that I was in some kind of ship that had the ability to fly so fast that time itself slowed down. It took me to a warehouse where all the colors of every sunset were stored on racks like bolts of fabric. Just one day's worth stretched for miles and miles of orange, rose, yellow, and cyan… I couldn't stop crying the whole time I was there because I knew that if I was ever able to return, the day I was seeing would already be gone forever.

… or this one:

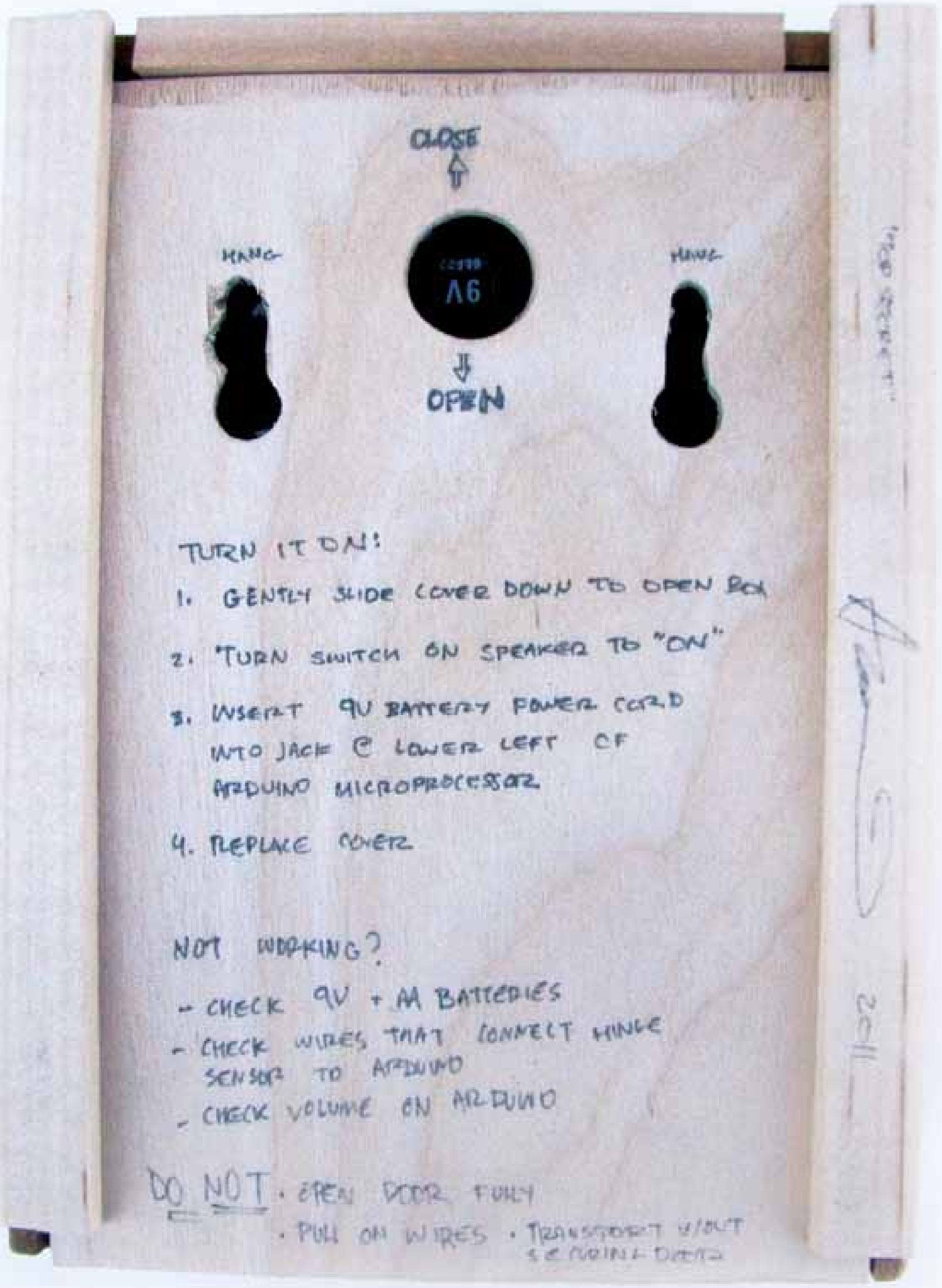
[from the archives] I once dreamed I met God. For some reason I was visiting heaven, which looked like a train station full of happy naked people floating up by the high glass ceiling. Someone there explained that it looks like that to everyone at first, but gradually it will change to look the way you expect heaven to appear, whatever that is. When I met God he was the same way — first he looked like a wooden Jesus on a cross, then gradually he changed into something more amorphous, like a real person but also not. We walked through a yellow-leaved birch forest and quoted *The Simpsons* to each other and laughed. I asked him if he was so good at remembering Simpsons quotes because he watched the show, or because he was God. "Because I'm God," he said with a grin.

… or this one:

10.2.10: I dreamed I had to list all kinds of animals in order of how many feet they have. The list went like this: "Pseudopod, monopod, biped, tricycle, quadruped, cephalopod, octopus."

At the end of my time at DMI, I have collected just over 50 dream narratives, spanning 11 months. Publishing these little stories on Facebook unexpectedly turned into another experiment in performative exhibitionism. I don't mind my friends reading about a dream in which I was a contestant on *America's Next Top Model,* but do I really want everyone to know that I have recurring dreams of committing violence against random strangers? For future social networking users, I offer the following: if you want to know who are the people you consider to be your real friends on Facebook, consider how many you are willing to tell about a dream in which your mother has given birth to a one-pound baby made out of whole-wheat bread.

Top Secret is the next evolutionary step of this ongoing performance piece/ writing exercise. The idea came to me suddenly when I spotted the cigar box in an antique store, complete with a small, handwritten "top secret" label on the outside. The lightness of the dry wood, the box's obvious age and sturdy construction, its slight musty-spicy smell, the ornate hinges and latch, all spoke to me. The object felt like it was already imbued with a life and history of its own, both mysteries to me, its newest owner. Later on, when I had to unscrew one hinge to add the sound-triggering bend-sensor, I found a scrap of the box's original label trapped beneath the hardware. Without that gold-embossed fragment the nature of the box's original cargo would have remained a mystery as well. My favorite aspect of all is the "top secret" label, which lets me know that I am not the first to repurpose this container as a repository of personal treasures.


CLOSE
HANG
HANG
OPEN
TURN IT ON!
1. GENTLY SLIDE COVER DOWN TO OPEN BOX
2. TURN SWITCH ON SPEAKER TO "ON"
3. INSERT 9V BATTERY POWER CORD INTO JACK @ LOWER LEFT OF ARDUINO MICROPROCESSOR
4. REPLACE COVER
NOT WORKING?
- CHECK 9V + AA BATTERIES
- CHECK WIRES THAT CONNECT HINGE SENSOR TO ARDUINO
- CHECK VOLUME ON ARDUINO
DO NOT · OPEN DOOR FULLY
· PULL ON WIRES · TRANSPORT W/OUT SECURING DOOR
2011


enercell
Alkaline
9V
Adapter
ON
OFF

Bringing *Top Secret* to the DMI studio when I had just completed the project provided a highly enjoyable user test scenario. "It sounds like a dead person talking!" Yaoming told me, approvingly. "Is that really you?" others asked, and "What did you say about cats?" I loved watching my classmates and advisor lean closer and closer to the piece, striving to hear the stories playing. Inevitably when presenting a new project we are asked "So, what happens when you have multiple users in the interface?" On many levels it was a pleasure to make a piece whose goal was to foster an intimate, physically close, one-on-one interaction between user and "interface." There are no "users" or "interactors" with this piece, just eavesdroppers.

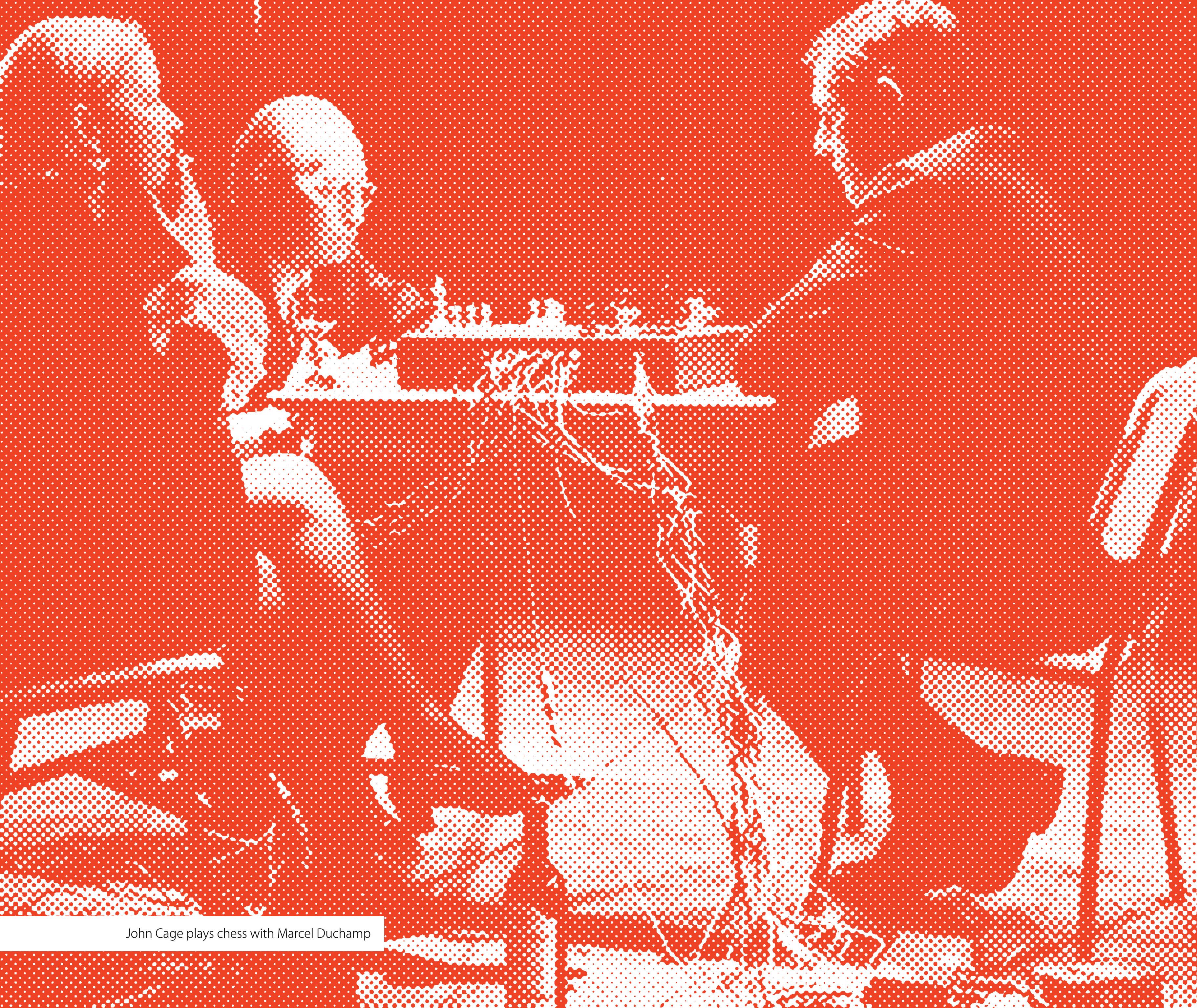
Top Secret was installed in a gallery for the March 2011 *Dreams* exhibition at the Boston School of Psychoanalysis. It seems very appropriate that this object, with all its personal and emotional resonance and history of self-exposure, should debut for public viewing among psychoanalysts and their students. During the opening we talked about the traditional Freudian interpretation that dreams are an expression of our unconscious wishes. At least one of my wishes, considered in this context, seems obvious: a desire for confirmation that the physical world is not always what it seems on the surface. In many ways, *Top Secret* and my other projects spring directly from this longing.

I was delighted to watch visitors at the *Dreams* exhibition interact with *Top Secret*. Individuals would approach tentatively, only half-believing the written instructions to touch and open the box. They would lean forward gingerly, not sure what to expect (if anything), then be caught and pulled in by the whispering voice. Some visitors approached in groups, listening one at a time. These people quickly found that they could hear a different story every time the box was opened. As I watched the same people come back again and again, I regretted not recording more dreams to preserve the illusion of a bottomless container.

During the exhibition, I noticed that my discomfort over sharing my dreams with others had disappeared. I speculate that this is in large part due to the fact that nearly all the gallery-goers that night were strangers. Without any personal relationship between us, the content of my dreams changed nothing about our perceptions of each other. It is much easier to perform for a group of strangers than for a roomful of supportive friends and family.

Thanks!
Gunta Kaza **Nicole Tariverdian**
Dr. Mara Wagner **Wan Ju Wei**

Dreams. Boston School of Psychoanalysis, 2011.



John Cage plays chess with Marcel Duchamp

HISTORY + CONTEXT

...for art does not transcend everyday preoccupations, it confronts us with reality by way of the remarkable nature of any relationship to the world, through make-believe.

… For art does not transcend everyday preoccupations, it confronts us with reality by way of the remarkable nature of any relationship to the world, through make-believe.

NICHOLAS BOURRIAUD, 2002

PERFORMANCE

My conception of performance art begins at the basic definition I helped write for teenage art students: “performance art is not scripted theater, but instead calls on the artist to use his or her body in real time and space to express an idea.” The key words in this sentence, body, real time, and space, express a fundamental truth about my experience of performance art: it’s all about the relationship created between an artist and her audience. The nature of this relationship, be it antagonistic, confusing, erotic, cooperative, or something else, is the raw material of a performer’s work. Curator and art critic Nicholas Bourriaud, in his series of essays *Relational Aesthetics*, suggests that we inhabit a moment in the evolution of art history when artists have begun to privilege the relationships that artworks enable over the production of objects. The “art object” in this context can be considered a byproduct of an experience of interaction among viewers, orchestrated by the artist. Interactions and relationships among viewers are the real media in which contemporary artists work, and physical objects are simply a lens through which an artist might choose to focus or express these interactions (Bourriaud, 2002).

As with any other medium, performers can exert more or less control over their materials during the creative process, but that control wavers when another person or people enter the equation. The beauty and the terror of audience lie in the utter unpredictability of their responses — will this be a hit? A disaster? An embarrassment? A fire-code violation? After the audience has viewed my work from every angle, will I still recognize what I originally made? Performance art invites this introspection, both in the moment of a piece’s presentation and in retrospect. In scrutinizing the behavior of an audience towards a performer, there is potential to learn about the relative success or failure of the performer’s concept, but also a chance to observe the unexpected interpretations those outside the creative process bring to the work. Perhaps more than any other artistic discipline performance relies on the active presence of viewers to complete a piece, their reactions to and interactions with the performer making meaning from a relationship among individuals. When live bodies and real time, two increasingly complex variables, enter the equation, the outcome of a work can change all its participants and their relationships to each other.

In the 1990’s performers began to look more carefully at the larger repercussions of relationships formed around and within a performance piece and its setting. In an early manifestation of this approach, Suzanne Lacey, Annice Jacoby, and Chris Johnson created *The Roof is on Fire* in Oakland, California in 1994. The group worked with 220 local teenagers to stage a massive audience interaction on the roof of a downtown building. Teens in small groups sat inside parked cars, carrying on a myriad of conversations about “media stereotypes, racial profiling, underfunded public schools,” and other issues of social justice and personal significance. Audience members walked the rooftop from car to car, “eavesdropping” and adding their own contributions. The *Roof is on Fire* was conceived by Suzanne Lacey as a response to participating teens’ frustration at “one-dimensional clichés promulgated by mainstream media,” as well as teens’ anger over their lack of a venue within which to express their concerns. The piece continued in a new incarnation in 1999 as *Code 33*, a “performative space in which the police and young people were encouraged to speak and listen…” transforming a performance piece into a tool for political action and social change (Kester, 2004).

Peter Dunn, a contemporary British artist, sums up this new approach to performance art, suggesting that he is becoming a “context provider” rather than a creator of “content,” seeking the core of his artistic work in the production of relationships, encounters, and communal experiences among his audience members (Kester, 2004). This “relational aesthetics,” to borrow a phrase from Nicholas Bourriaud, has become an important paradigm for artists working in many media from the 1960’s to the present. Dynamic media, by nature interactive, has the potential to embody the same relational aesthetic, to provoke or provide situations in which users might form relationships, learn something about themselves, or create something new. Works of dynamic media invite this kind of collaborative participation to greater and lesser degrees — my concern here is in the possibility of overlap between dynamic media and the cardinal elements of performance art: body, space, and time.

It is tempting to use "relational" and "participatory" as interchangeable terms when drawing a connection between performance and dynamic media works. After all, media objects from Facebook, to iChat, to Google are participatory, allowing users to put their own content into an otherwise empty container for an audience of peers. This possibility of choice, reconfiguration, customization, and personalization is in fact a defining characteristic of "dynamic media," digital interfaces and objects that require the user to take an active role in the creation of his or her own experience (Manovich, 2002).

Interactions with these commercial social networking tools are controlled, however, "scripted" both in their coding language and in the order and type of interactions that are possible. In addition, many of these social media interactions are controlled by moderators and site administrators, content filters, and copyright safeguards, and most rely on marketing campaigns targeted to users, rewarding those who portray a coherent consumerist persona (Manovich, 2002). In order to interact in a truly unexpected and unplanned manner within these interfaces, a user requires the complicity of her community of fellow interactors, who must witness her non-normative behavior in order to validate that it took place. Before, during, and after I used Google as a platform for a live performance art piece, the Google interface remained unchanged and apparently unaware of my intervention. Although common, an experience of control or limited options is not a necessary or universal component of the dynamic media experience.

What are the qualities that make a work "relational," a step of interactivity that requires a deeper engagement and perhaps a greater emotional commitment than simple participation? Practitioners of relational work in the realm of performance describe projects that produce a situation within which both artist and audience must respond to unexpected events and actions within a designed framework or via pre-set guidelines for behavior (which may or may not be obvious). Even if the actions or setting that constitute the scaffolding of a work are repeatable, the experience of performer and audience will never be the same twice.

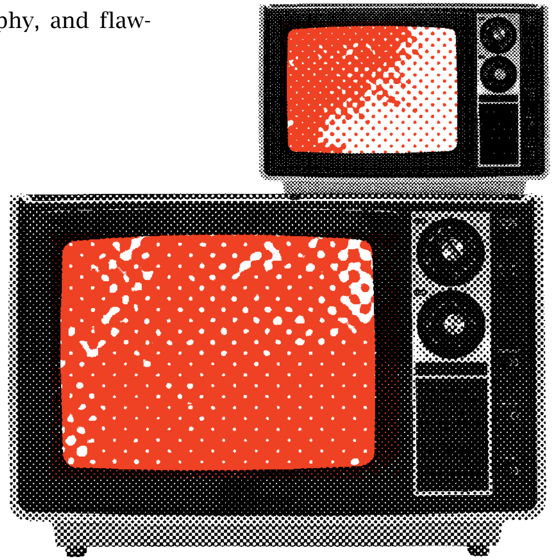
From this point of view, a work's creator instigates interaction, and perhaps even defines the boundaries and framework for how that interaction will take place, but in the end the work itself cannot exist without participation from its audience, which is beyond the artists' control (Kaprow, 1961). Still, what elements really distinguish these relational works from the previously mentioned Google, Facebook, and iChat, which are also all empty containers waiting to be filled by eager audiences? I would suggest that relational artworks are distinguished from the simply participatory by their capacity to surprise both their audience and their creators with unexpected behaviors. To take the live body in space and real time of performance art, and add to that the potential for both the audience and performer to create through interaction something that did not exist before.

The Roof is on Fire. Performance with 220 teens. 1994, Oakland, CA.
Suzanne Lacy, Annice Jacoby, Chris Johnson. Photo courtesy of Suzanne Lacy.

The very quality of "liveness" has become nebulous as media from movies to reality television purport to give audiences access to live performance while simultaneously stretching and complicating space and time between audience and performer. Television in particular has begun to train us to take for granted the substitution of small images on a screen for "real" physical interaction or at least co-existence. Billed during the early years of the medium as "broadcasting events exactly when and as they happen," to quote Lenox Lohr, president of NBC in 1940, TV set out to give viewers the experience of looking directly through a portal to a different but simultaneously existing time and place (Auslander, 2008). In this way, digital media (even the non-interactive kinds) shape our expectations for what constitutes a "live" encounter, and therefore our perceptions of reality itself.

Breaking down the experience of watching a TV sitcom, Philip Auslander, Professor of Performance Studies and author of *Liveness: Performance in a Mediatized Culture*, notes the theatrical touch of taping "before a live studio audience." Of course these shows are edited, Auslander continues, which means that despite the impression we receive of realness and simultaneity "the home audience does not see the same performance as the studio audience, but rather a performance that never took place" (Auslander, 2008). Three years after Auslander's Liveness was published in its 2nd edition, the neatly plotted storylines of reality TV shows from America's Next Top Model to The Real Housewives of Beverly Hills make the point even more clearly. In the comfort of our living rooms and on computer screens, TV presents content that is simultaneously a true record of real events and also an edited, carefully controlled storyline.

The advent of digital media has fundamentally changed how we as audience members experience a "live" event or interaction. "To put it bluntly," writes Auslander, "the general response of live performance to the oppression and economic superiority of mediatized forms has been to become as much like them as possible" (Auslander, 2008). Charting the evolution of popular entertainment from live staged performances, through the first movies, to early television programming, followed by the heyday of music videos and the present ubiquity of reality TV, Auslander notes that each medium replaces its predecessor by taking on key qualities of the medium that came before. TV shows borrowed from the conventions of theater in early broadcasts, which were "shot in proscenium" and "wedded to an Ibsenian four-act structure" (Auslander, 2008). More recently, the advent of highly-processed and edited music videos has profoundly affected live performance of music, as pop concerts become ever more focused on preplanned special effects, choreography, and flawless sound production.



When media permeates performance, and even "pure" performance makes reference to the visual and experiential tropes of mediatized experience, what becomes of the relationship between artist and performer? If a key characteristic of "relational" and performative artworks is that within the boundaries of the work anything might happen, much of contemporary mediatized performance lost its relational qualities as production and scripted "reality" became the norm. In the world of digital media, where invented personae populate non-corporeal representations of imaginary space, references to the live body are attenuated, or discarded altogether. One has only to enjoy an online video of a performance by a pop singer pre-recorded from another time zone while simultaneously commenting on a blog post mocking her outfit to understand the vexed nature of "live performance." This phenomenon is perhaps exacerbated by the technologies of online and digital media, but the question of what makes a "real" performance is not a new one. For years performers have grappled with similar questions, scrutinizing "live" works, and the documentation of those pieces to determine when, where, and with what authenticity a performance actually happened.

“The role of documentation,” performer and critic Amelia Jones wrote in a 1997 article, “[is to] secur[e] the position of the artist as beloved object of the art world’s desires.” Jones’ observation reminds us that the art world is a community whose commerce is based almost solely on physical objects: the paintings, sculptures, furniture, weavings, or what-have-you that populate galleries everywhere (Jones, 1997).

Viewers form relationships with these objects, which embody the labor and artistic process of their creators but also have their own separate existence as completed physical manifestations of an idea (Jones, 1997). Performances, and perhaps also dynamic media works, cannot be so easily separated in time and space from their creators. Documentation of a performance or interaction, be it video, photographs, sound recording, or written testimony, provides both the solidly physical object that commerce craves, and also a validation that the work took place at all (Auslander, 2006). At the same time, documentation of a body’s live act cannot ever produce a true substitute for the experience of witnessing a performance in person.

Performance’s reliance on documentation is exciting, possibly even signaling the genesis of a new art form, but at the same time it places a serious constraint on variable and performative art and media works that take their substance from unpredictable audience inputs. Who but the artist herself and the (necessarily comparatively small) group of spectators who see the work can really be said to have proof that the work exists? Yves Klein’s celebrated 1960 piece *Obsession with Levitation (Leap into the Void)* exists as a photograph of Klein apparently plummeting towards a cement sidewalk from a second floor window. Few if any spectators were with Klein when the “live” event took place, a staged jump into a net that was later manipulated with the help of a photographer to give the illusion of a fall which did not in fact take place. Klein created a seeming documentary of a performance that did not actually happen as shown, a tradition expanded upon by artists from Cindy Sherman to Matthew Barney, and explored in even greater depth by advertisers and other commercial media producers.

In Klein’s case, the documentation is the piece, and the live actions of the artist are incidental (Auslander, 2006). As audience members, we will generally suspend disbelief willingly when viewing these works because it is our habit to equate photography and video with reality. There is pleasure in being made to believe in something which never happened, perhaps in part because with that illusion comes a sense of sharing physical space with the performer, a feeling that we were there too when these impossible acts took place.

Obsession de la lévitation (Le Saut dans le vide) / Obsession with Levitation (Leap into the Void). Yves Klein, 1960

EXPERIMENT 4

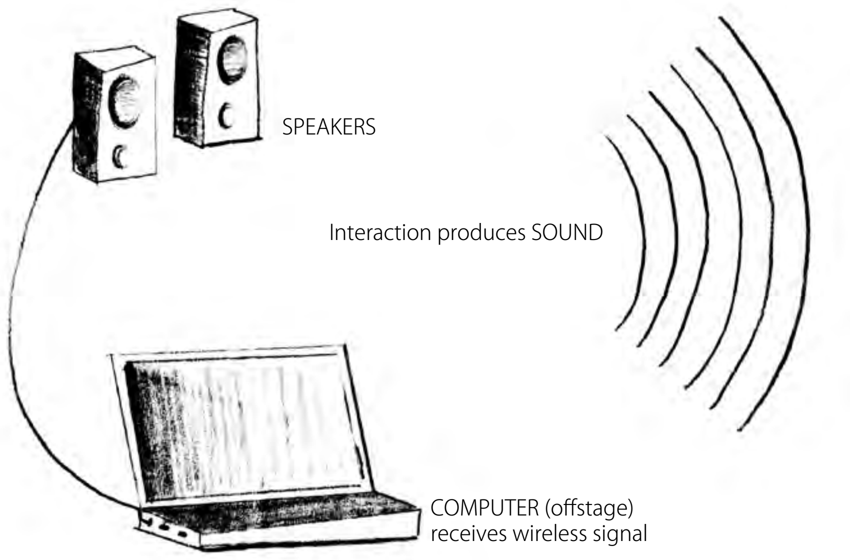
Arm Instrument

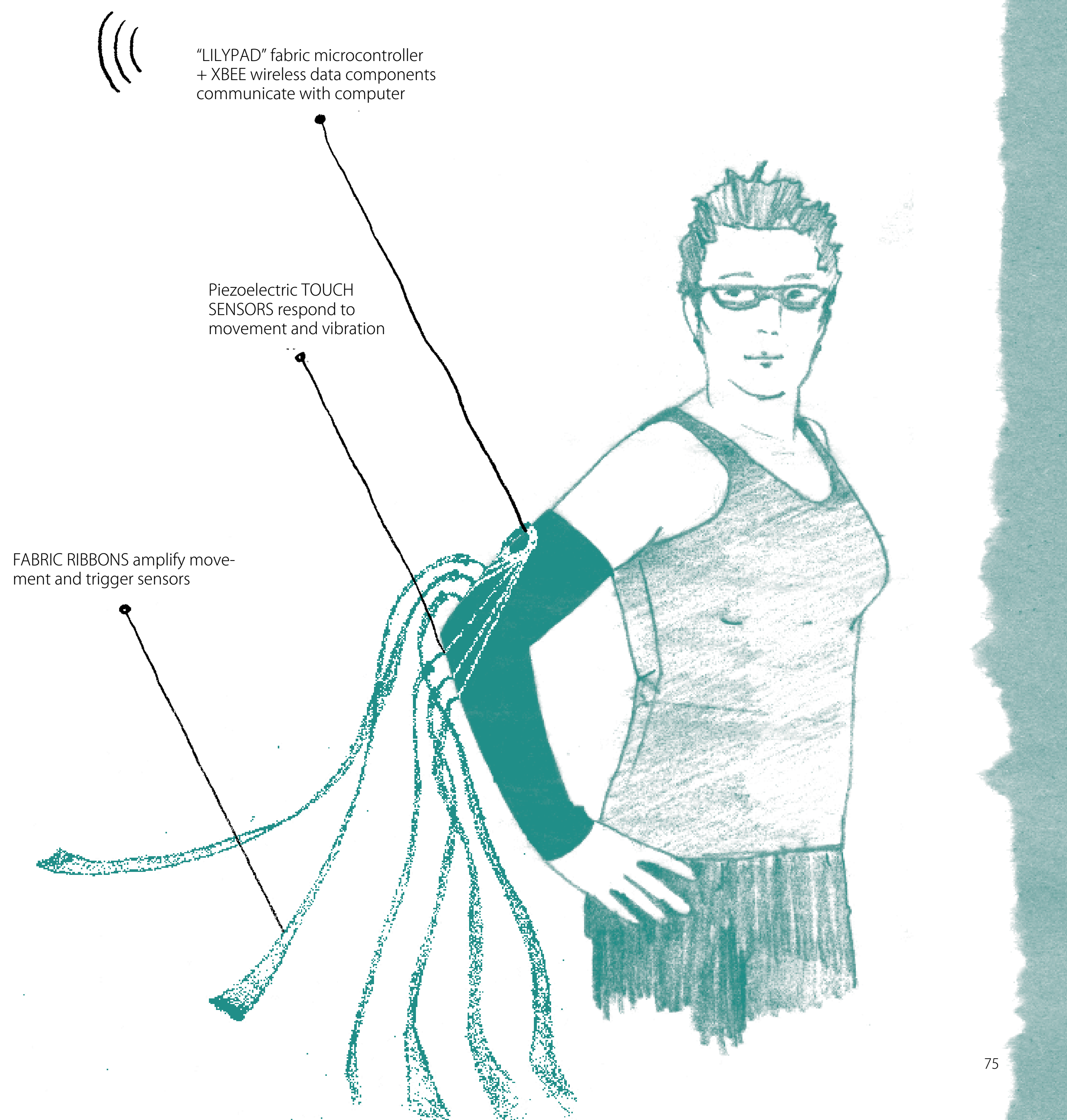
Arm Instrument is a touch-sensitive, wearable, digital instrument. Piezoelectric sensors are attached to a skintight spandex “shooter sleeve” worn by a performer. Signals from the piezo sensors are transmitted wirelessly to a computer and speakers. Players touch, tap, or stroke the wearer’s arm to elicit sound: my wife humming a pentatonic scale. *Arm Instrument* is an opportunity to explore the nuances of relationships between bodies in physical space, the experience of touch between strangers, and the slippage between “interface” and “performer” when interaction requires contact between bodies. Is this touch empowering? Objectifying? Comforting or uncomfortable? By using the human voice as my sound material I hope to magnify the impression of body-as-interface, and create an environment of closeness, sensuality, and unexpected recontextualization of human responses.

Arm Instrument represents my most direct (and, for me, most uncomfortable) experiment with the body's potential to take on the characteristics of interface. Having once made a decision about the unique sound of this "instrument," I leave other participants with the responsibility of creating music, interacting physically with my body, and making their own meanings from the exchange. *Arm Instrument* is an exploration of my emotional and physical boundaries in social and public situations, and an experiment with my audience's notions of what it means "to interact" and "to relate" to a person versus an interface.

The potentially dehumanizing aspects of digitally-mediated experience have been well-rehearsed in texts by Sherry Turkle , Nicholas Carr , and many others. It may be a truism that digital interfaces and mediatized experience have changed our relationships with people and our environment, but still the long-term nature and impact of these changes can't be predicted. Without preconceptions, I want to discover what occurs when the modern tendency bemoaned by many to conflate the digital and the physical is made literal. Does a layer of digital data superimposed on the experience of touch make tactile interaction between strangers more or less intimate? More or less comfortable? In *GoogleChat* I explored the issues that arise from the notion that our relationship to digital interfaces embodies them with their own personae. With *Arm Instrument* my body itself becomes the interface and to interact means to enter into a relationship (however brief) with me.

When interacting with *Arm Instrument*, audience members are given the choice to acknowledge my presence inside the instrument, or to mentally erase our physical relationship from their manipulation of sound material. As a performer inside the piece, I am faced with a similar choice: do I remain a passive conduit for another's experience, or do I let my own responses and physical existence become an unignorable part of the process of interaction? As an introverted person who is uncomfortable with the physical proximity of strangers, I find I need to adopt an unfamiliar persona in order to make myself a successful "frame" for *Arm Instrument*. My wife Jen's voice in the piece adds both an additional layer of intimacy and yet another uncomfortable source of personal exposure. As audience members make music with my piece, I can't help feeling that the details of my intimate relationships, sexual orientation, and personal identity are on display for manipulation by others. Will this ultimately be a liberating, painful, or desensitizing experience, or something quite different?





Visitors to a Happening are now and then not sure what has taken place, when it has ended, even when things have gone "wrong." For when something goes "wrong," something far more "right," more revelatory, has emerged. This sort of sudden near-miracle presently seems to be made more likely by chance procedures."

Visitors to a Happening are now and then not sure what has taken place, when it has ended, even when things have gone 'wrong.' For when something goes 'wrong', something far more 'right,' more revelatory, has many times emerged. This sort of sudden near-miracle presently seems to be made more likely by chance procedures.

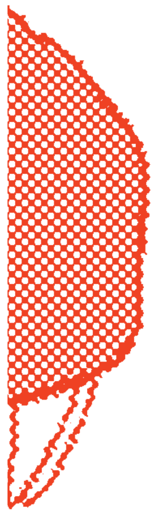
ALLAN KAPROW, 1961

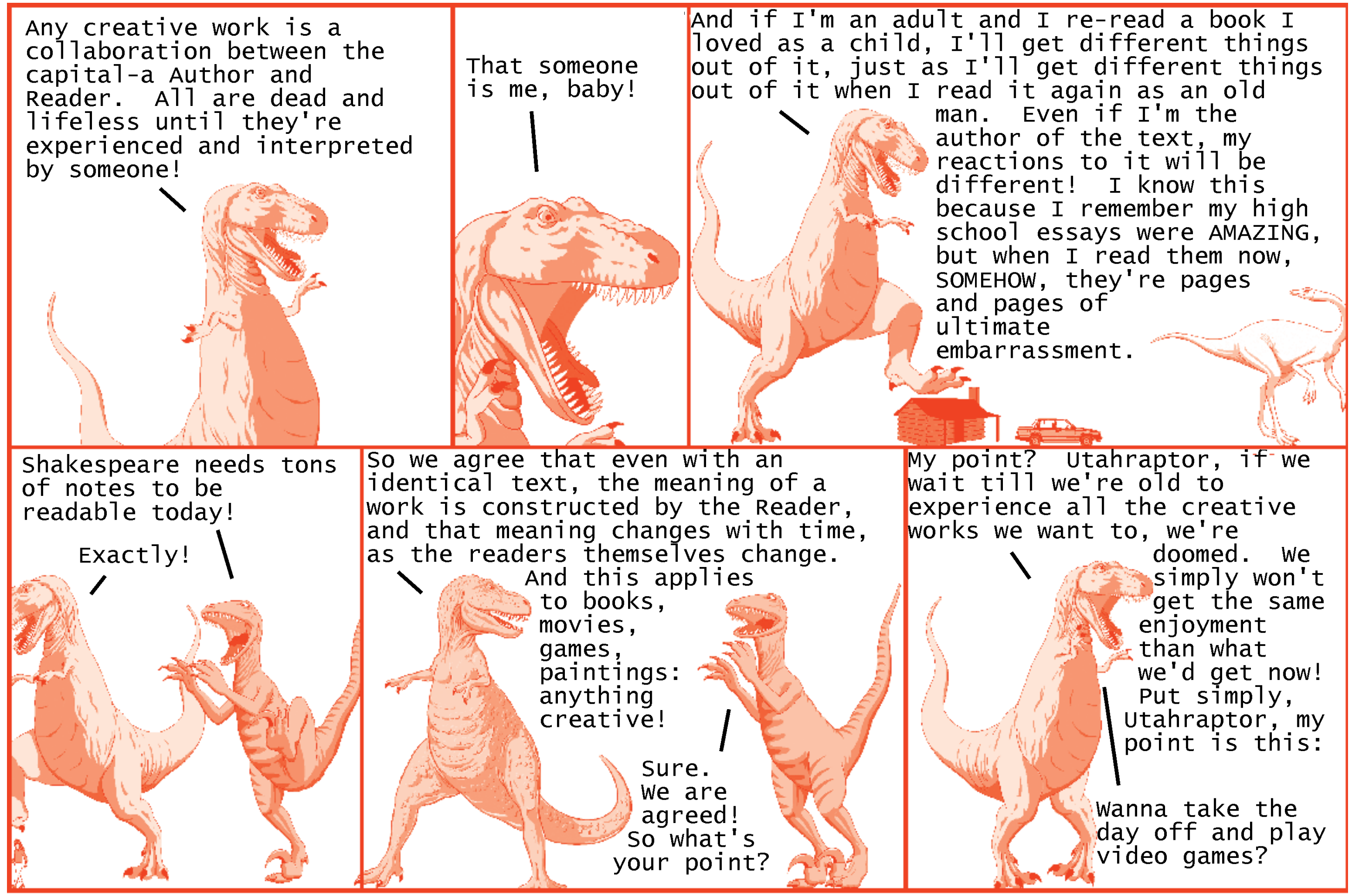
AUTHORSHIP

Writing in 1961, Allan Kaprow, a performer, painter, and pioneer of the art form of the "Happening," articulated a philosophical framework for a new kind of performance art that seems to presage current considerations of dynamic media art, participation, and authorship. The Happenings Kaprow orchestrated and took part in are described as free-flowing, loosely-scripted bacchanalia of visual and auditory content. He tells of "blankets falling over everything from the ceiling," "a hundred iron barrels and gallon wine jugs hanging on ropes," and "a nude girl run[ning] after the pool of a spotlight, throwing spinach greens…" (Kaprow, 1961). Happenings, without "any particular literary point" present a gleeful destruction of the rules of reality, but also provide a medium for artists intrigued by the possibility of orchestrating a specific chaos from carefully chosen contexts, performative acts, objects, and audience members. Rarely documented, Happenings were specifically designed to be unique occurrences. The same conditions might be attempted more than once, but the event itself "is materialized in an improvisatory fashion, like jazz." Like jazz performance, the outcome of a Happening is judged on the success of unexpected variations produced from the same basic building blocks, not accurate reproductions of an experience that has already taken place (Kaprow, 1961).

According to Kaprow's analysis of the history of the Happening, the form is rooted firmly in the traditions of painting. Happenings are not produced by "theater people" but by "advanced" painters harkening back to Surrealism, Dada, and even "medieval mystery plays." That avant-garde artists who began working in paint, one of the most traditional and least participatory media, should be drawn to the constructed madness of the Happening in Kaprow's opinion is a natural reaction to a disconnect between artworks and the context in which they are traditionally viewed. Sterile gallery spaces and the stylized discourse of art critics completely miss the point of the art object, "dessicat[ing] and prettify[ing]" the wild spontaneity of the artists' actions in the studio. For painters who feel that their medium has exhausted its potential, the next logical step is to use any means available to create and draw viewers' attention to what Kaprow calls the "organic connection between art and its environment." The audience itself is a key element of this environment, and so they are brought into the spectacle, simultaneously viewers, creators of the Happening's substance, and just one material among many others at an artist's disposal. Thus, writes Kaprow, "there is…no separation of audience and play" (Kaprow, 1961).

Looking forward 30 years from Kaprow's Happenings to Amelia Jones' musings on the value of artifacts of performance as a source of revenue and cultural capital, questions arise. When considering variable, performative works from Happenings to audience interactions with dynamic media objects, who is the author and what exactly is she author of? Kaprow presents one answer with intriguing implications for dynamic media: "The action leads itself any way it wishes, and the artist controls it only to the degree that it keeps on 'shaking' right… Control (the setting up of chance techniques) can effectively produce the opposite quality of the unplanned and apparently uncontrolled…" (Kaprow, 1961). To be an author of this kind of work, the artist is obliged to select "a handful of ideas" and "keep shaking" until events have reached their logical (but unplanned) conclusion. Ceding the authorship of unrepeatable moments, interactions, and actions to the audience, the artwork's essence lies in "a flexible framework with the barest limits established." The creators of Google, Facebook, Tumblr, Livejournal, and a host of clones have made fortunes on just this sort of "flexible framework," whose limitations may or may not be apparent to their users. Kaprow, writing decades before any of these technologies were conceived, manages to draw a key distinction between a Happening, whose limits or structure are set as a painter selects colors and forms on a canvas, and the limits an entrepreneur designs to maintain a monopoly: once Kaprow's system is in motion, no one knows what will happen next.





Dinosaur Comics: Before you answer, remember that regrets are for people who didn't take days off. March 8, 2011
Ryan North. www.qwantz.com [reproduced with permission]

Kaprow and his "advanced" painters discovered in the Happening a new approach to their ideas and artistic process that connected the world of traditionally static 2- and 3-dimensional works to the practice of performance. Writing in 1962, a year after Kaprow's summing-up of the traditions and processes of a Happening, Umberto Eco arrived at a series of similar conclusions. The idea that the viewer of a piece of art somehow "creates" the work by her perception and interpretation is not a new one, even in the 20th century. Eco looks back to the Baroque era to find the origins of our modern approach to artworks: no longer "an object which draws on given links with experience and which demands to be enjoyed;" but instead "a potential mystery to be solved, a role to fulfill, a stimulus to quicken the imagination." (Eco, 1962) Art audiences, Eco suggests, have since the 16th century been active participants in the life of the works they see, solving mysteries of interpretation and eventually, with "quickened imagination," creating something new of their own.

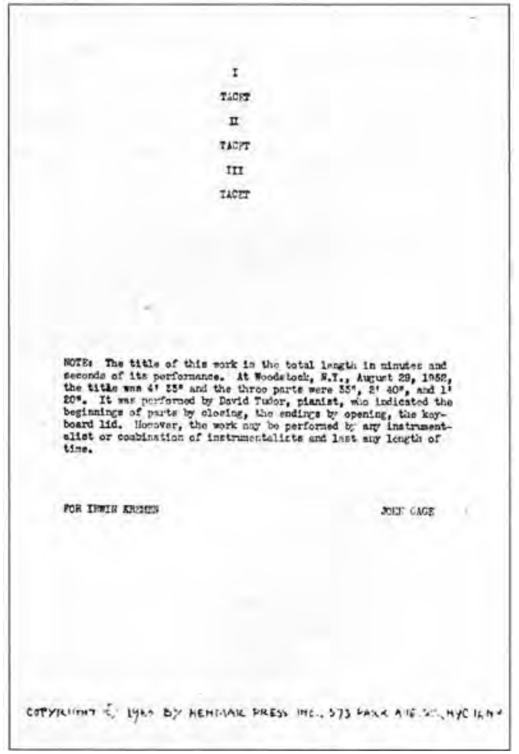
Eco's concern is musical composition, a realm already intimately acquainted with live audience and performance. He cites examples of works composed between 1952 and 1958 which all require that a performing musician "impose his judgment on the form of the piece… an act of improvised creation." Like the artists who produced Happenings in the 1960s, these composers author a framework within which musical experimentation and unscripted improvisation are required to complete the piece.

Henri Pousseur's 1957 *Scambi* is made up of "sixteen sections" and according to the composer is "not so much a musical composition as a field of possibilities." A performer of this work is asked to choose the order in which the work's sections are played, or whether to play multiple sections simultaneously. This piece remains a collaboration between composer and performer for a more-or-less passive audience, but, says Poussuer, "if they [*Scambi*'s 16 sections] were tape-recorded and the purchaser had a sufficiently sophisticated reception apparatus, then the general public would be in a position to develop a private musical construct of its own…" (Eco, 1962). Just over 50 years after the piece was composed, Pousseur's theoretical "sophisticated reception apparatus" has become a reality, opening again an opportunity for *Scambi*'s musical collaboration to encompass an endless number of audience members, all creating the work after their own desires.

Allan Kaprow and Henri Pousseur approach the creation of relational performance from two different directions, one influenced by the traditions of drawing and painting, the other trained as a classical composer. They share in common an interest in the act of "framing," using the parameters of their performative works to draw the audience's attention to specific moments of interaction, creation, and relationships. The artist or composer builds the frame, but it is up to the audience to look through, to notice and interpret what is within, and by their participation to validate that "an artwork" has taken place. John Cage's iconic *4'33"*, which premiered in 1952, embodies the process of framing a moment for witness by one or many audience members/ performers.

4′33″ is a silent piece in three movements. As originally composed, the work was made up of a set of instructions for a pianist who timed the three movements with a stopwatch, standing to open and close the piano's cover at the end of each section. A later version of the piece consisted of simple text instructions: the number of each movement followed by "tacet," a musical term in Latin meaning "it is silent." Cage's instructions for the "I tacet II tacet III tacet" version of *4′33″* state that the piece can be played on any instrument (or none), and can encompass any length of time. "To Cage," writes music critic and composer Kyle Gann, *4′33″* "seemed, at least from what he wrote about it, to be an act of framing, of enclosing environmental and unintended sounds in a moment of attention…" (Gann, 2010).

John Cage embraced a spirit of chance and apparent randomness in most of his work, creating compositions by flipping a series of coins or consulting the *I Ching* to determine sequences of notes, and creating instruments from duck calls, falling radios, teakettles on the boil, and modified or "prepared" pianos. *4′33″* is in many ways anomalous within his body of work. Generally, once the scores for his more elaborate pieces (such as *Water Walk*, performed live for a studio audience in 1960 on the I've Got a Secret Show) were created, Cage was meticulous and adamant about accurate performance by his musicians, many of whom performed while holding a stopwatch in one hand to precisely time the beginnings and ends of sounds (Gann, 2010). The open-endedness of *4′33″*, and Cage's eventual willingness for the piece to be played on any instrument for as little or as much time as a performer desires, places him as a bridge between Henri Pousseur's musical experiments of the 1950s and Allan Kaprow's Happenings in the next decade. While couched in the terms of musical composition, Cage's piece is really about pushing listeners into a greater awareness of their environment, ambient noise, and their own physical presence. Movements of air, changes in lighting, the presence of other listeners, the body's responses, even the weather outside all profoundly influence how *4′33″* is experienced (Gann, 2010). To hear the piece is to perform the piece, an experience that is visual and tactile as much as it is auditory.



I

TACET

II

TACET

III

TACET

NOTE: The title of this work is the total length in minutes and seconds of its performance. At Woodstock, N.Y., August 29, 1952, the title was 4′ 33″ and the three parts were 33″, 2′ 40″, and 1′ 20″. It was performed by David Tudor, pianist, who indicated the beginnings of parts by closing, the endings by opening, the keyboard lid. However, the work may be performed by any instrumentalist or combination of instrumentalists and last any length of time.

FOR IRWIN KREMEN

JOHN CAGE

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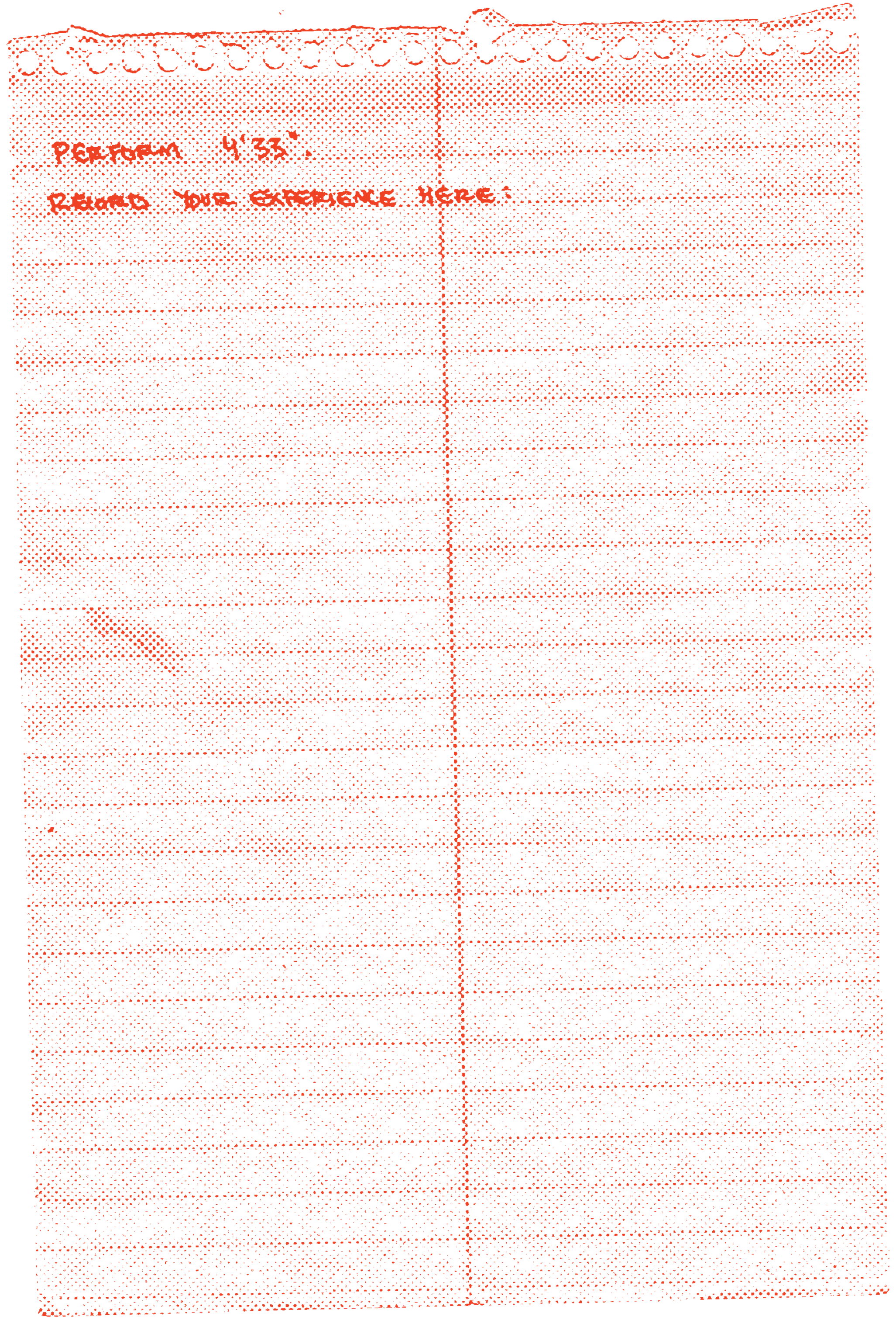
4′33″ Score. John Cage, 1960.



EXPERIMENT 5

Whisker Organ

Whisker Organ is an instrument that links the voices of a 30-person chorus with 48 black cat whiskers. To create the *Whisker Organ*, I connected the cat whiskers to piezo-electric touch/ vibration sensors, which, when activated by touch, trigger a series of sung notes and chords. *Whisker Organ* is to be installed in a gallery, lit and mounted in such a way as to suggest that participants are on stage as they interact. To the best of my ability, the piece is designed to hide all evidence of its mechanics (sensors, wires, computer components), offering participants no clues to the interface beyond the mystery of a bank of black whiskers seemingly growing upwards from a pedestal-mounted wooden box. *Whisker Organ* was created in collaboration with the Oriana Consort (Walter Chapin, Conductor) who performed the notes for the instrument's database in March 2011.

This piece is foremost a project about touch and context. The *Whisker Organ* apparatus and interface are designed to draw maximum attention to the smallest possible interaction: a fingertip brushes a cat's whisker, triggering an explosion of sound. The staging of the piece in the gallery adds weight and gravitas to a user's actions, elevating those who interact with the piece to the place of performers or conductors. In the same way that an organist can control massive sound from a room-sized instrument with a light finger-touch on a single key, the sound reaction to interaction with the whiskers will be oversized, startling, and emphatically out of proportion. I am interested in the experiential effect of connecting massed human voices to a cat's whisker, juxtaposing and joining two organic but otherwise unconnected references.

This project is a good example of the axiom that an artist should never throw away interesting materials for lack of an immediate plan for their use. After four years of collecting shed whiskers from my two black cats, I have picked up nearly 100 whiskers of uniform color and size. I have always admired the minimalist beauty of these objects, which are pointed at one end like a porcupine's quill, and at the other end taper away to near-invisibility.

I am not the only one who collects her cats' whiskers. Anecdotal evidence strongly suggests that cats' whiskers are objects of fascination and desire for many people, most of who begin and continue collecting (as I did) without any particular purpose initially in mind. My own inspiration to begin collecting whiskers came from fellow weirdo Peter Buchanan-Smith's 2001 coffee table book *SPECK: A Curious Collection of Uncommon Things*.

SCIENCE

A cat's whiskers (*vibrissae*) are a measuring tool: they help her determine whether or not she will fit through a narrow opening. Whiskers are sensitive enough to pick up vibration from a breath of breeze, but are also remarkably strong and resilient. Although digital sensors generally provide a poor substitute for the sensitivity of analog touch, the combination of a cat's whisker and a piezoelectric film sensor is surprisingly responsive. This makes sense from a metaphorical standpoint: when agitated, the piezoelectric film in *Whisker Organ*'s touch sensors produces a small electric charge, which is detected by an Arduino. In the same way, when a cat's whisker detects an object or vibration, its movement triggers an electrical firing in her nerves, which communicate with the brain. The difference here is that technology has allowed me to take the cat's responses out of context and apply a totally unrelated reaction (sound) to a familiar input (touch).

Out of context, *Whisker Organ*'s whiskers become mysterious, elegant objects, inescapably creepy to see and touch. This is my intention. I am not interested in making a piece about cats, but instead I want to explore the subtler emotions evoked by contact with organic objects that have been repurposed to transcend their original function. I hope to evoke in users both a frisson of physical discomfort, and a desire to prolong the interaction, and to experiment with the tools at hand.

THE BENEFITS OF DIFFICULTY

I am interested in exploring the potential for creating "instruments" that overlay normal physical space with a layer of sensitive technology accessible through touch and movement. A user does not need any special skill to play the *Whisker Organ*, but repeated interaction and practice are rewarded by a richer, more coherent sound, as the interface becomes familiar. In this way, the experience of creating a sound composition becomes accessible to users without musical training by creating an interface that responds to their natural curiosity. By creating works modeled on musical instruments and the behaviors of play, I want to set up a situation that pushes participants to reflect on the meaning of what they create by becoming more aware of the process of creation. I'm not a musician. Most likely someone else will come along who plays *Whisker Organ* much more skillfully than I can. Most likely someone with even less musical expertise than I can claim will play *Whisker Organ* badly. I hope for both.

Coaching my first user (Professor Gunta K.) though the learning process for playing the *Whisker Box* 6-whisker prototype led me to reflect: is the piece more like a "real" instrument if it requires some effort to play it effectively? Does some slight difficulty in the experience foster a learning process which could result in a more sustained or meaningful experience? Is my goal for users to make noise, or to learn something and then make noise with intentionality? Any instrument (from a kazoo to a violin) requires some finesse to play well. For some a certain level of skill is needed simply to produce any sound at all, while for others (a piano or a xylophone, for example) sound comes easily, but it is much more difficult to make a sequence of notes that sound "good" tonally and rhythmically.

As a non-musician observing others' practice, it seems to me that playing an instrument requires two kinds of skill: 1. The technical/ physical ability to produce a "good" sound (whatever the industry standard might be) from the object in question, and 2. The ability to hear and analyze the sounds you create, and to make intentional and "interesting" relationships between them based on varying rhythms and pitches. While Skill1 is instrument-specific, Skill 2 may be something more universal to all musical expression. As an instrument-maker, my concern is to facilitate Skill 2 for more practiced users, but maybe more importantly to create an engaging and challenging experience of Skill 1, and its learning process.

I cannot control how skillful my users will be (which is as it should be) but I can to some extent control what their learning experience will be. In my own experience, one thing dynamic media does very well is to motivate users to practice the skills required for successful interaction when they can expect a reward of deeper or evolving engagement. This is why I play Tetris for hours, clicking and clicking buttons until I can move the pieces fast and smoothly. I imagine that this may be why others play Mario Kart, Wii Tennis, and other games of skill and agility. The learning process comes with a sense of reward, even if I haven't really accomplished anything tangible. Something keeps me coming back and trying to improve, because both the interaction and the result are somehow pleasurable. I wonder if there exists a parallel between this kind of repetitive play and the obsessive practice of a skilled musician?

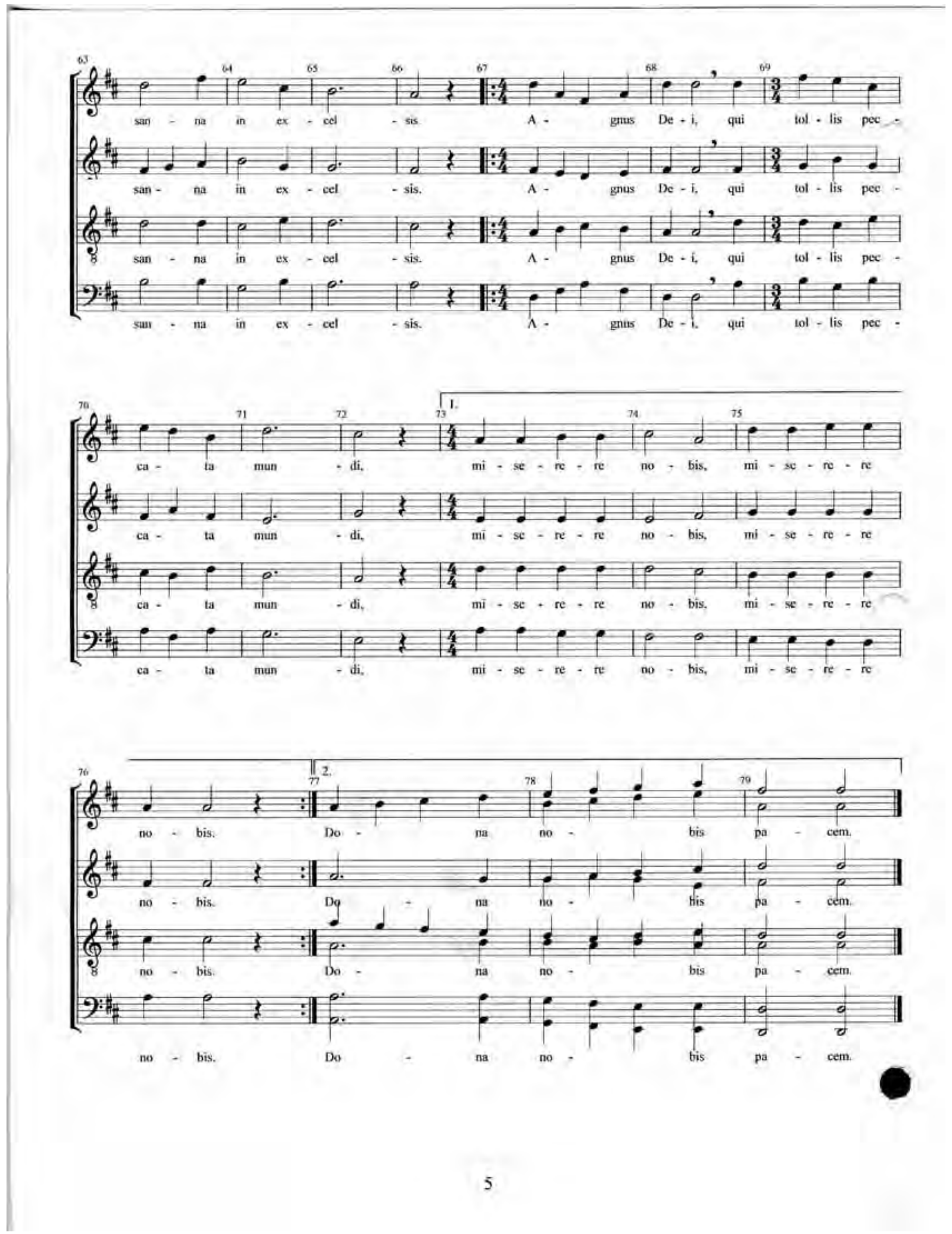
My hypothesis is that I will achieve a successful dynamic media musical interface when the process of learning to play is sufficiently gratifying at the outset (the equivalent of a kid banging on a xylophone) but more rewarding and with a richer "output" as a user practices and becomes more skillful. In other words, an instrument is an interface that allows users to gain technical expertise, and eventually to practice, experimenting with relationships between pitch, timing, rhythm, and even performance style.

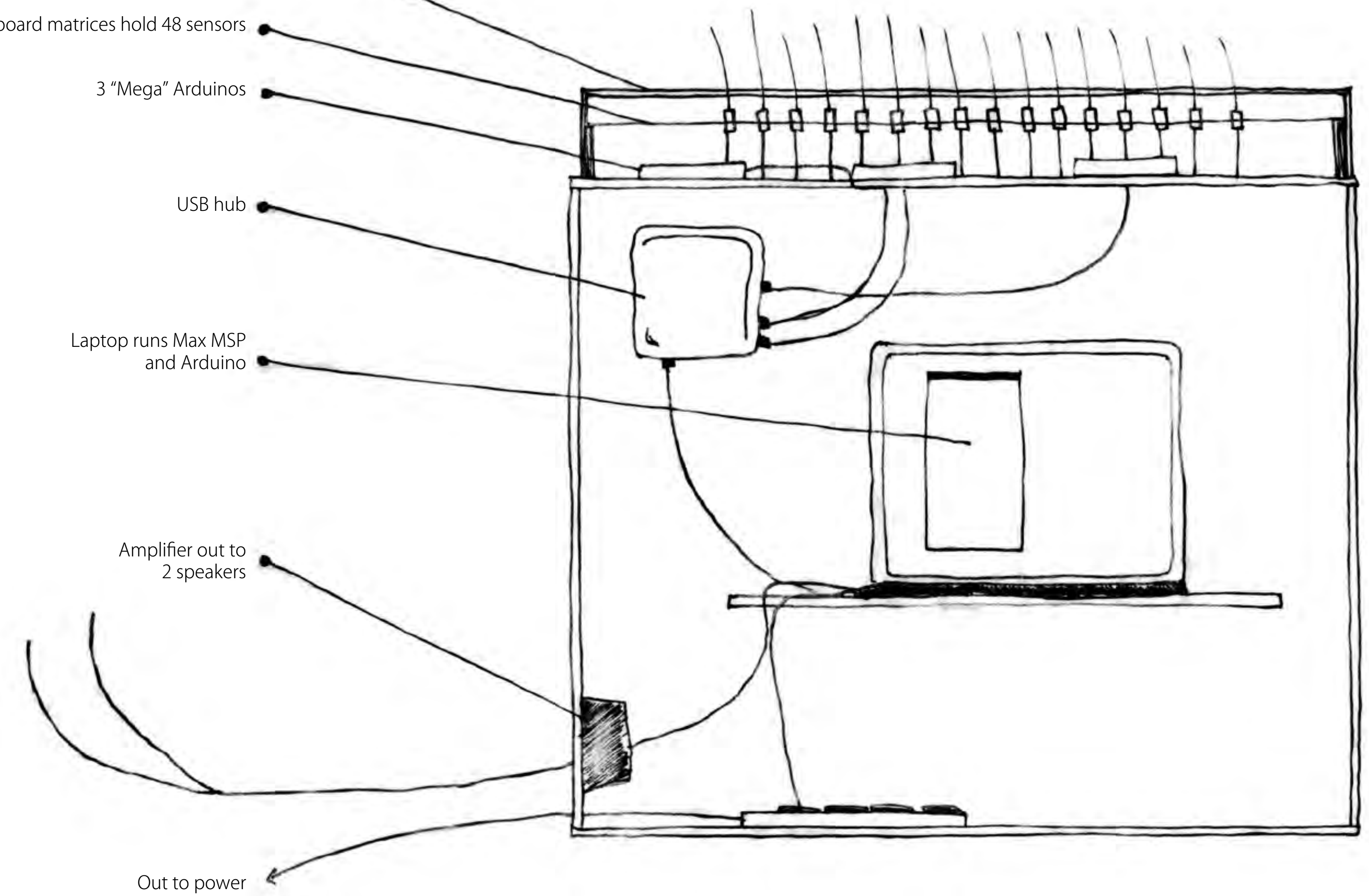
Visitors to *Whisker Organ* in the Bakalar Gallery, 2011.
Photo by Andrew Ellis.

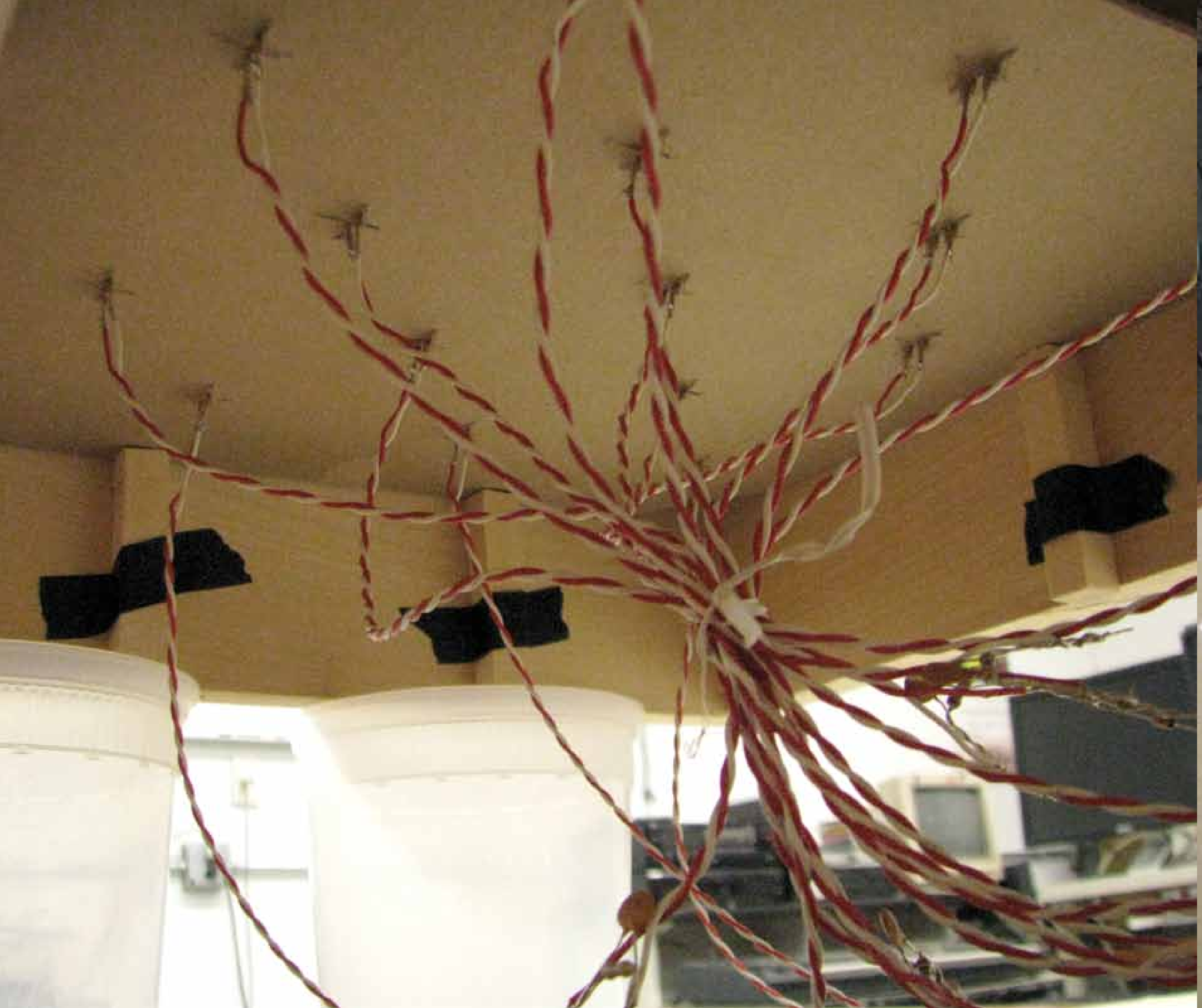
MUSICAL COLLABORATION

"Well…" said Walter Chapin, composer and conductor of the Oriana Consort "Well, but I'm afraid it would be boring." Walter and I were meeting to discuss a possible collaboration with Oriana to produce the sounds for *Whisker Organ*. I could tell, as he sat at the piano in his living room playing chords with one hand and holding a graphing calculator in the other, that my vague request for "a collection of notes" puzzled and concerned him. A retired computer programmer turned professional musician and sometime composer, Walter is fascinated with how everything works, quizzing me endlessly on the minutiae of programming an Arduino and wiring sensors. At the same time, I think precisely because he is such a skilled musician, he initially seemed to find my project confusing: if you want the sound of a chorus, why not just listen to the real thing? If you want an instrument, what's wrong with the piano? I realized as we talked in circles for hours that we were mutually baffled not by some deep conflict about the nature of musical performance, but simply by parallel but incompatible vocabularies.

As in many circumstances of trying to explain my work to new people, John Cage provided a bridge between my frame of reference and Walter's. Our conversation took an exciting turn when we simultaneously both mentioned Cage, an excellent example of a composer who, as a painting teacher of mine once said, "collaborates with chance." I rephrased my explanation of *Whisker Organ* again, suggesting that we could work together to create an instrument that would be the only vessel capable of playing the music Walter composed, music that was structured by his authorial choice, but eventually endlessly variable based on users' playing. He agreed, but I could tell he still wasn't sure what he was agreeing to. I left our meeting terrified, feeling for the first time the true weight of attempting this collaboration: a big piece of the puzzle was out of my hands, and beyond my control.

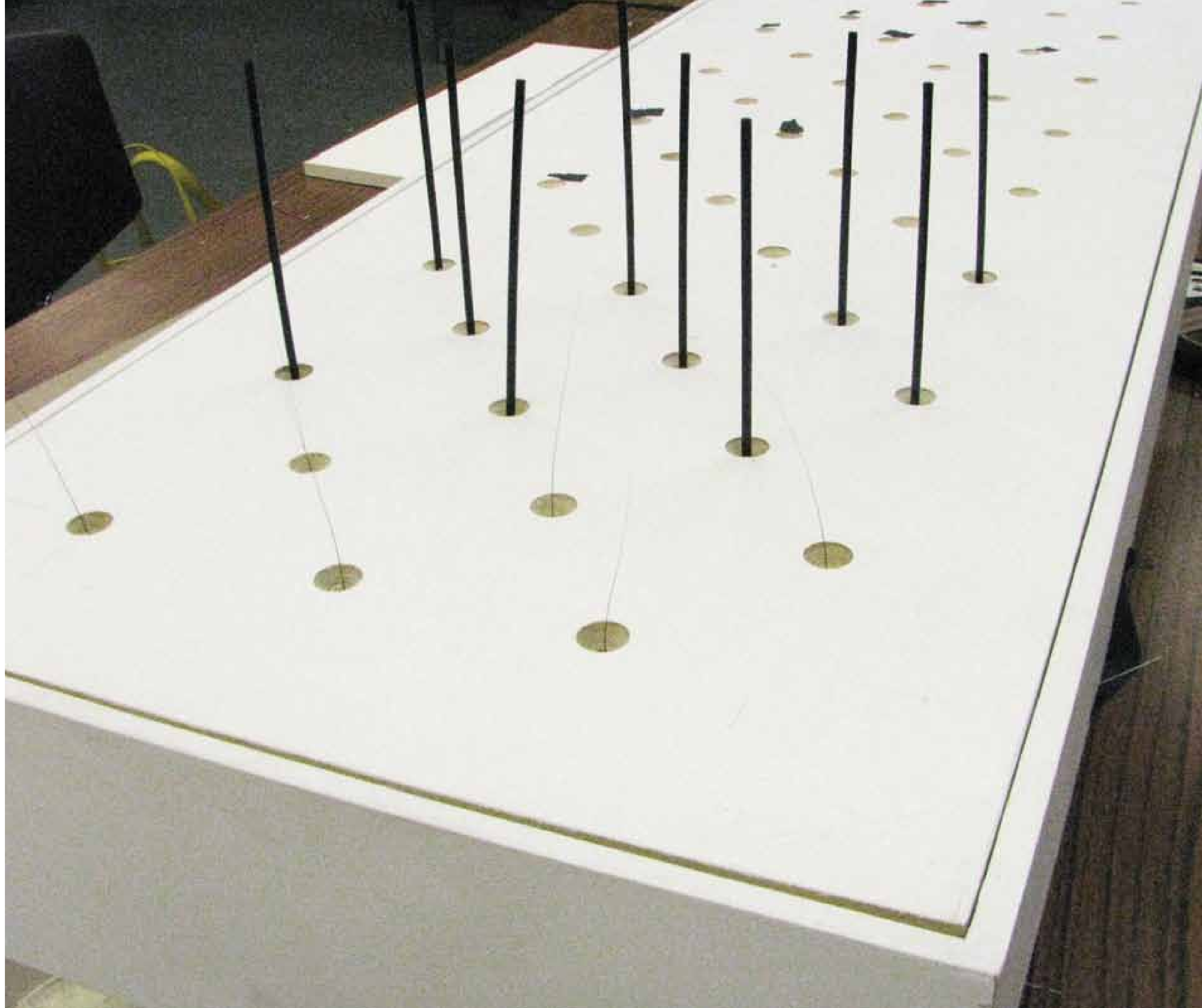
For our March recording session, Walter composed *Missa Brevissima* (*An Extremely Short Mass*), a 5-minute setting of the traditional text of the mass, inspired by Mozart's *Missa Brevis in D Major*. With some assistance and interpretation by my wife Jen (a long-standing member of the chorus), we adapted Walter's composition to be recorded. In the end, the notes I collected for *Whisker Organ* are made up of separate soprano, alto, tenor, and bass lines singing the "dona nobis pacem" of the *Missa Brevissima* note by note (with pauses between) in harmony and unison. To the best of my ability, I hope to preserve the chorus' authentic sound during the editing process, so I took care to capture the beginning and end of each note, and the charged pause between. Users may or may not make sense of the words as they stroke whiskers and hear the voices of the chorus come together, but at the highest level of musical organization, the piece sings "give us peace." The solemnity of the mass, and the meaning of the words, seem appropriate to me.

Missa Brevissima (excerpt). Walter Chapin, 2011.

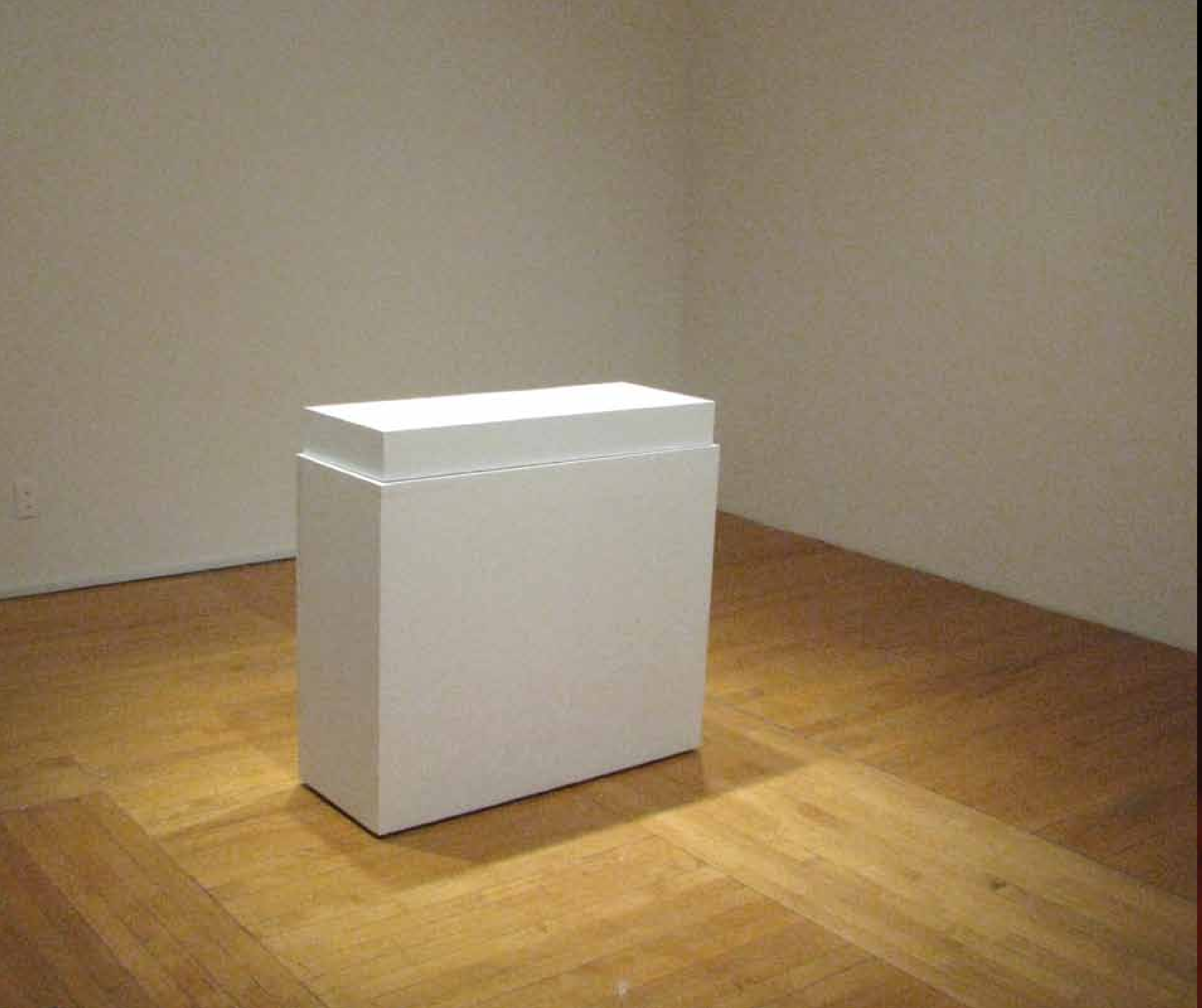

Removable top is separate element
3 cardboard matrices hold 48 sensors
3 "Mega" Arduinos
USB hub
Laptop runs Max MSP
and Arduino
Amplifier out to
2 speakers
Out to power

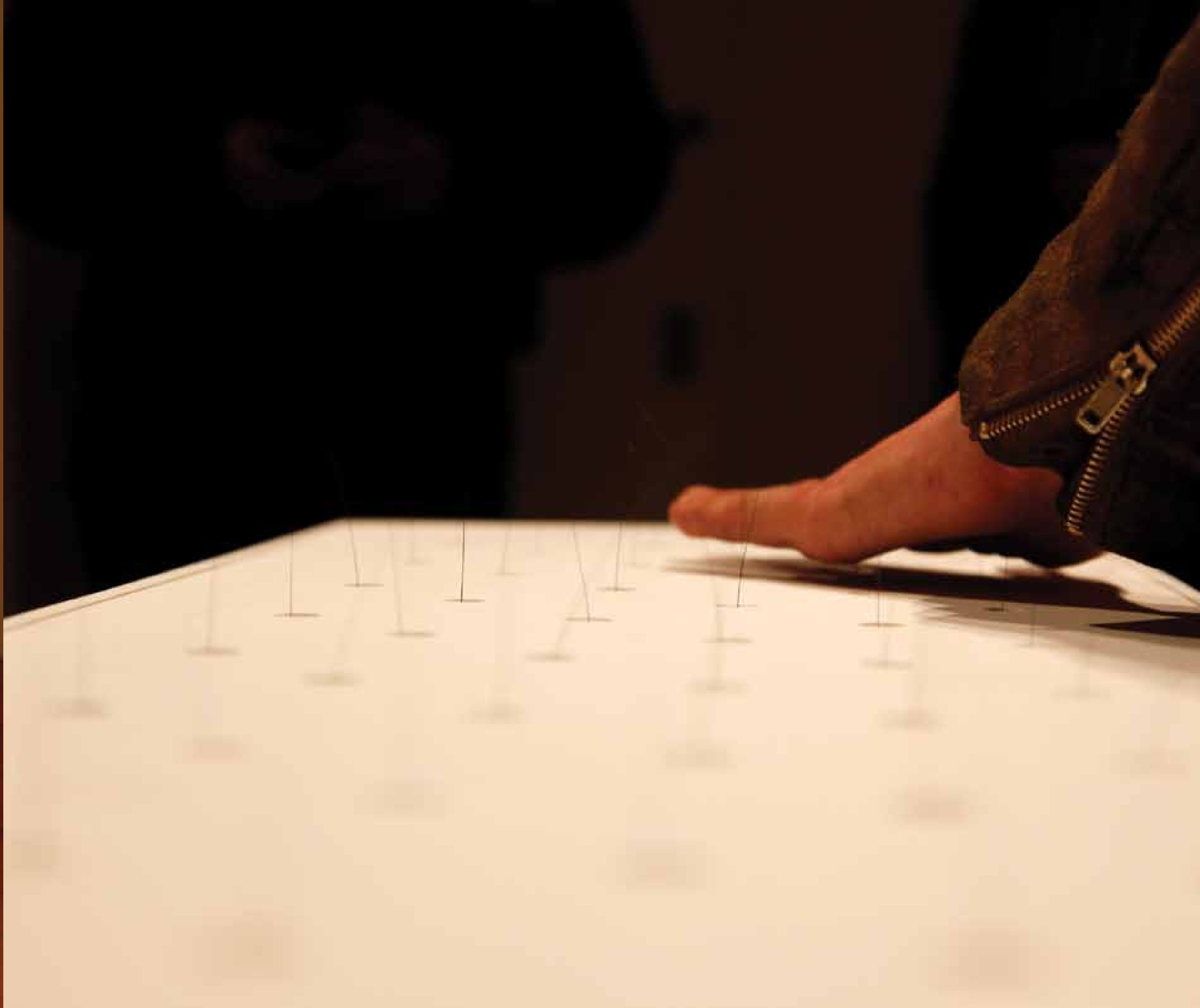


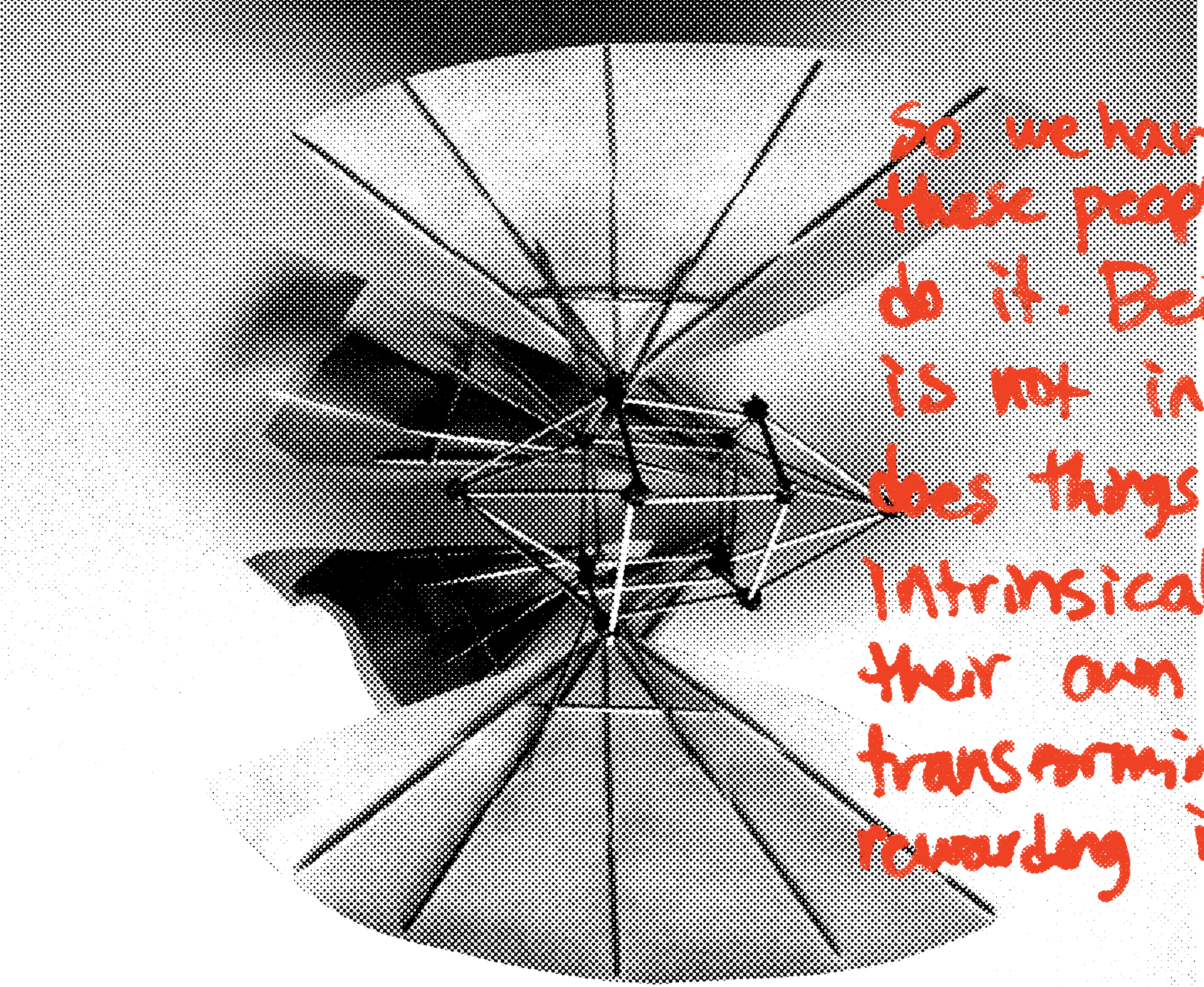
LEFT: My friend and fabricator Jesús Matheus works on *Whisker Organ*'s pedestal.

RIGHT: I used plastic drinking straws to guide the whiskers through their holes in the top of the pedestal.









So we have to assume that it is not *what* these people do that counts, but *how* they do it. Being an engineer or a carpenter is not in itself enjoyable. But if one does things a certain way, then they become intrinsically rewarding, worth doing for their own sake. What is the secret of transforming activities so they are rewarding in and of themselves?

So we have to assume that it is not what these people do that counts but how they do it. Being an engineer or a carpenter is not in itself enjoyable. But if one does things a certain way, then they become intrinsically rewarding, worth doing for their own sake. What is the secret of transforming activities so they are rewarding in and of themselves?

MIHALYI CSIKSZENTMIHALYI, 1996

CREATION

Standing on the shoulders of giants like John Cage, Henri Pousseur, and Allan Kaprow offers an interesting view of the future of our interactions with dynamic media. It is no surprise that the most pervasive of media are those which sprang from an entrepreneurial urge, filling previously unknown market niches with better tools for social networking, personalized advertising, packaging of pop-culture performance, and spending. The technology that supports these applications is rich and diverse, bringing our digital interactions more and more into synch with the routine tasks of daily life. Now that these tools exist — software that allows a video camera to track motion through a room, code that captures and processes recorded sound, sensors that respond to touch and vibration — what else can we make? Communities of writers take advantage of social networking platforms like LiveJournal to self-publish the equivalent of volumes of literature. Video game players borrow digital recording technology to create original short films whose plots unfold using the game's scenery and characters.

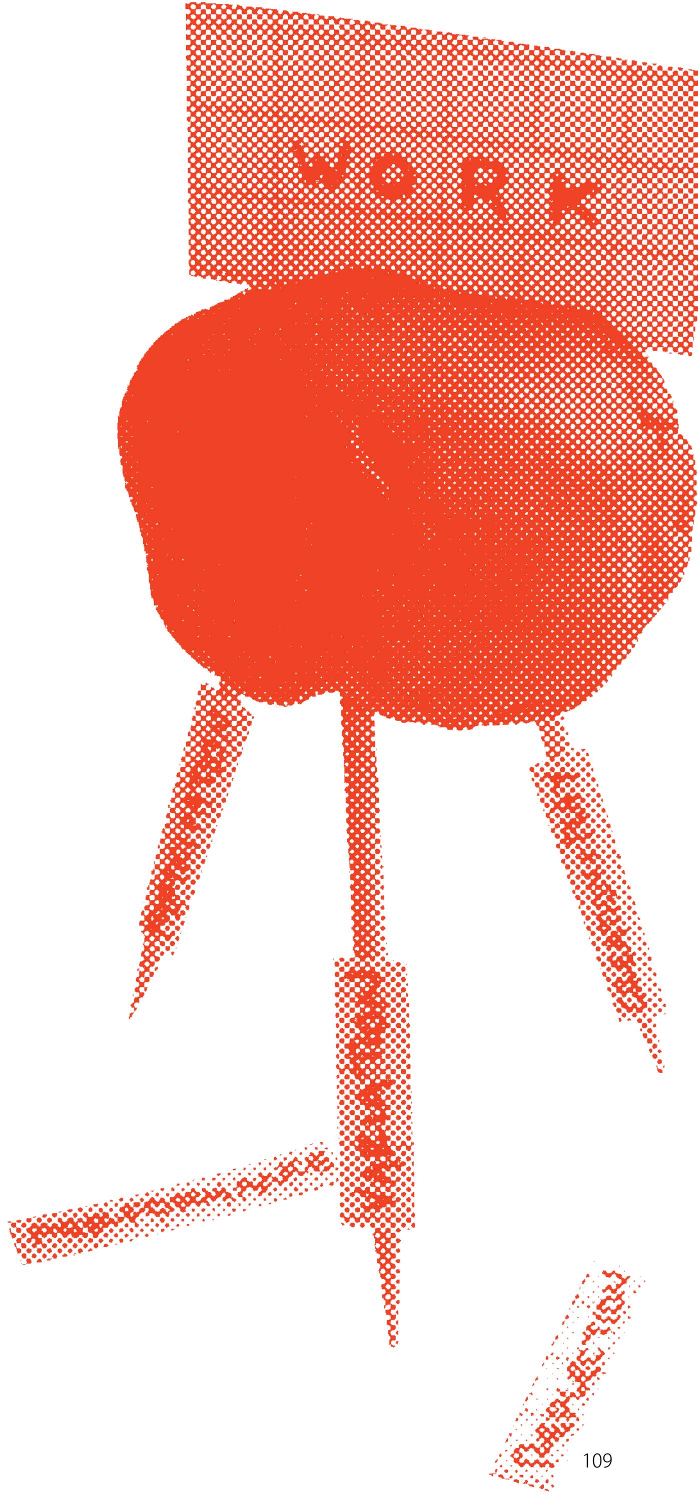
The impulse of dynamic media audiences is already one of hacking, experimentation, creative repurposing, and generation of personalized content. If we add to this layer of audience engagement the unexpected outcomes and unpredictable behaviors Kaprow sought in his Happenings, will the result be a collaboration between the artist who frames an experience, and an audience who fills the frame with their own ideas and creations?

To proceed in the direction of framing a particular context or set of activities for the input of others, some conditions must be established to make that participation both possible, and ultimately meaningful and rewarding. Dynamic media interfaces of the more commercialized variety, despite designs intended to make every interaction as "user friendly" as possible, are rarely created with the purpose of pushing their users to act spontaneously and creatively. If the goal for a new approach to dynamic media is to create works that must be performed by their audience in order to be experienced, how can the artist ensure that audience members will be willing to partake, and take the experience seriously as an act of creation?

Education and psychology scholar Mihalyi Csikszentmihalyi describes in detail the experience of "flow," a state of being that characterizes creative work. Csikszentmihalyi interviews "creative individuals" from chess champions, to composers, to neurosurgeons who universally describe "an almost automatic, effortless, yet highly focused state of consciousness" while engrossed in their work. The central emotion or memory described by Csikszentmihalyi's subjects when reflecting on their working process was of "discovering" something new, which they consider the source of pleasure in creation. These discoveries could be something significant but they could also be trivial or of small importance for the overall project — the enjoyment and sense of accomplishment were the same. This feeling of pleasure or fulfillment is one Csikszentmihalyi equates with sex, consumption of alcohol, or enjoyment of a good meal: physical as well as intellectual and emotional, and also potentially addictive.

"Creative people" seek out this sense of discovery in the same way that others might pursue physical pleasure, privileging curiosity and a search for knowledge over more conservative, or less risky choices. (Csikszentmihalyi, 1996)

"The problem," Csikszentmihalyi writes "is that the term 'creativity' as commonly used covers too much ground." For the purposes of his own research, Csikszentmihalyi defines creativity more narrowly, limiting the designation to activities and individuals that have significantly and lastingly changed the domain in which they work, or even the larger sphere of human thinking. Einstein's theory of relativity and Darwin's theory of evolution are both examples of this kind of game-changing creative discovery. Although Csikszentmihalyi does not specifically address the "every day" creative activities of people who simply go through life making, performing, or approaching problems in unexpected ways, it is easy to see connections between these "small" acts of creativity and more major discoveries (Csikszentmihalyi, 1996). Csikszentmihalyi's research does suggest that the thought processes, experimental mindset, and excitement over new discoveries of creative people could be learned, resulting not always in world-altering flashes of genius, but instead in thoughtful variation in the routines of life and relationships among people and between people and objects.



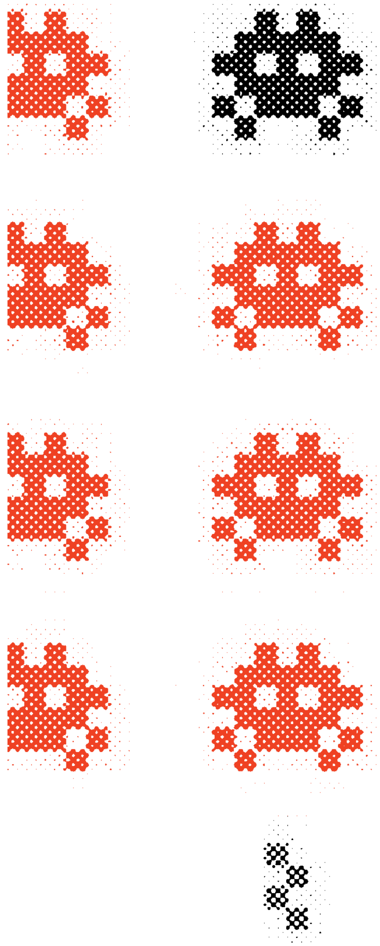
The arts education field offers strategies for creating an environment conducive to creative discovery that will be familiar to anyone who has taken a studio art or design class. Studio teacher and researcher Rebecca Sokol Levine writes about designing "art problems" for her middle-school classes, seeking to create a situation that appeals to students' individual interests as well as her pedagogical goal to transmit specific technical skills. Levine considers a successful art problem to be an "open-ended question or statement focused on elements of an artmaking process that challenges students to make choices and generate original ideas" (Levine, 2009).

This interplay of challenge, choice, and originality focuses students' attention and technical experimentation in areas defined by the instructor, while leaving the conceptual content and interpretation open to the individual creators. Because the lesson is focused on "problem-solving," exploring the creative use of materials to express personal ideas and symbolism, success comes when a student experiences Csikszentmihalyi's "discovery" through increasing technical skill and conceptual sophistication.

In order for students to recognize this moment when it happens, and to experience "engagement" as defined by Levine (including "attraction to their own artwork," "persistence" and "visible delight") they must be given opportunities for reflection on their creation as well as working process. This reflection might take place through documentation of personal responses or group discussion in the classroom. Another important avenue for reflection, which allows students to consider the impact of their work on others as well as their own personal sense of success, is public exhibition or performance of completed works (Temmerman, 2008).

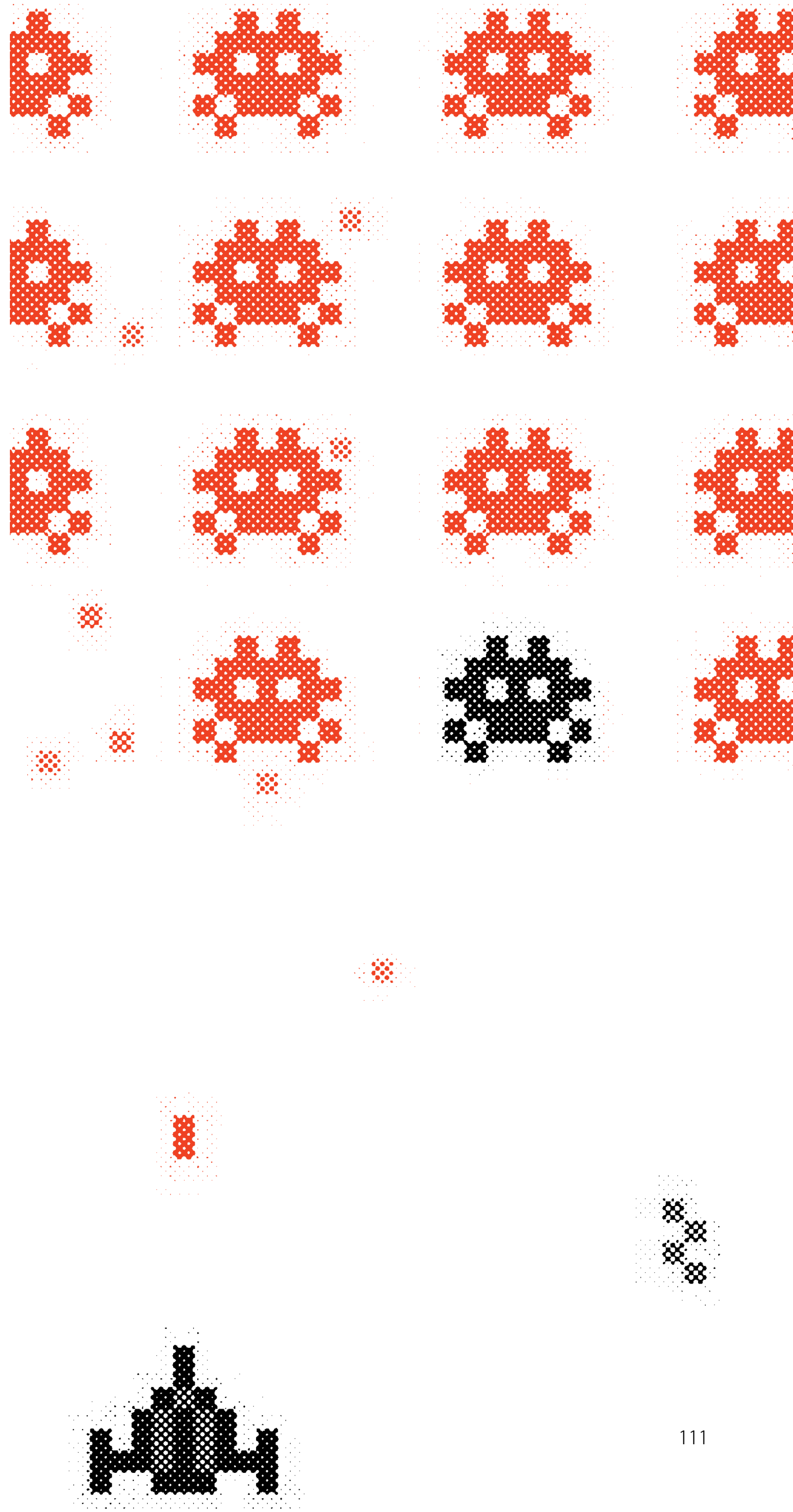
Comparing these lessons of early-childhood arts education with Csikszentmihalyi's research on professional adults' creative processes reveals obvious commonalities. To generalize, a situation that fosters creativity in problem solving, use of materials, self-expression, or relationships includes limitation (what Levine calls "focus"), experimentation, and reflection. The creative people Csikszentmihalyi speaks to whose experiences form the basis of his research are generally successful, and well-established in their fields. They are in a position to reflect back on many years of their own working process, and to make some generalizations about the conditions that foster their creative work. From these interviews and his own observation Csikszentmihalyi identifies a series of "elements of enjoyment," which he considers the hallmarks of a successful creative experience.

Among other markers of creative "flow," Csikszentmihalyi describes: clear goals every step of the way (limitation); immediate feedback to one's actions (reflection); and a balance between challenges and skills (experimentation) (Csikszentmihalyi, 1996). These desirable conditions are also perhaps familiar to interface designers: clarity, responsiveness to input, and user engagement over the long term. A well-designed interface, from Doom to GMail will give thought to these conditions and attempt to meet them consistently for as many users as possible.



In a situation where the goals or outcomes of the dynamic system are not rigidly defined, and users' input constitutes an important element of the work itself, these considerations are of first importance.

Video games, arguably, are the arena in which dynamic media has truly begun to live up to its promise to transform the way we experience stories, and interact with the world. While the complex hypertext narratives postulated in the 1990's as the future of storytelling never developed into a viable alternative to the novel, video games have explored the intriguing boundaries between entertainment, storytelling, performance, and creation of personal narratives (Murray, 1997). While some consumers may revel gleefully in the violence of popular games like Grand Theft Auto, others see potential in "zen games" of concentration and mental agility like Flower. For others, the complex storylines of games like Legend of Zelda give gaming the impetus of a good story driven forward by plot twists and cliffhangers. Still others relax within the rigid rule set of geometric puzzle games like Tetris. Within all of these experiences, Csikszentmihalyi's clear goals, immediate feedback, and balance of challenge and reward serve to prolong the player's engagement. Is gaming an intrinsically creative act? Perhaps not, but the sense of discovery and accomplishment which characterize the work of creative people may be the ingredients that keep us coming back with eager fingers to conquer the next level, free the princess, and rack up a high score (Paumgarten, 2010).



Shigeru Miyamoto, a renowned Nintendo game designer (responsible for Donkey Kong, Super Mario Brothers, Legend of Zelda, the first sports games for the Wii, and many others) describes the game worlds he creates as "miniature garden[s] you can put into a drawer and revisit any time you like" (Paumgarten, 2010). Interviewed in 2010 for The New Yorker, Miyamoto compares video game design to "writing a good detective novel." "The difficulty with video games, unlike movies or novels where they author can lead the audience to the end, is that in games it's the players who find their own road to the end." The game designer's challenge is not only to create an enticing tactile experience and a good story, but also to structure players' opportunities for interaction to allow for a gradual, but satisfying, acquisition of skill. This is "the pull" of a great game: a carefully-calibrated balance between challenge with unpredictable rewards and comfortable repetition. Miyamoto compares this process to practicing an instrument — a mix of tactile and intellectual challenge that ends with the user rewarded by a sense of mastery (Paumgarten, 2010).

Miyamoto's detective novels and miniature gardens sound as enticing as a popular novel or an adventure movie, but many observers question whether there can be real creative possibilities for video game players, or if the sense of success and discovery merely masks wasted time that would be better spent outdoors or in face-to-face interactions with others. "Individuals become immersed in the beauty and coherency of simulation," Sherry Turkle, Professor of Social Studies of Science and Technology writes, "indeed, simulations are built to capture us in exactly this way." (Turkle, 2010).

Turkle's concern over the effects of computer simulation as a replacement for "analog" tactile experiences of writing, drawing, and building centers around science and architecture students' observations of the ways in which computer software influences their creative process. While some students were disturbed by the tactile disconnect between digital simulation and actual materials (a major concern for professional as well as student architects), others were troubled by a sense of "premature closure" fostered by the precision and cleanliness of digital renderings. Some of Turkle's interviewees also speak more positively about how simulation can "push you to play," encouraging "tinkering" and "randomness." Professional architects, long out of school and currently working on major projects, expressed more complex reservations about the introduction of digital technology into their creative process. "…the computer is supposed to put you in a state of mind where you try this and that and keep making changes," says architect Howard Ramsen, "but… because it [the computer] presented everything at such a level of detail the building seemed finished after we had put in pretty much our first idea" (Turkle, 2010). The digital interface beguiles us to "fall into the model" and play within our simulated creations, but Turkle suggests, it may also actively prevent the truly creative thinking and experimentation necessary to new discoveries.

Whether approaching dynamic media with Shigeru Miyamoto's ebullient adventure writer's sly humor, or Sherry Turkle's measured caution and eye on the future of creative endeavor, the central importance of play cannot be ignored. Dynamic media is not finding something new within our psyche when we spend hours playing Angry Birds on an iPhone, or when we pore over the many chapters of the Myst saga. Just as the love of a good story is considered a universal human trait, so too is our love of make-believe, what Dutch thinker Johan Huizinga calls "stepping out of 'real' life into a temporary sphere of activity with a disposition all of its own" (Huizinga, 1950).

Neither Huizinga nor Miyamoto make grand claims for play: a generally "useless" activity that brings us pleasure but has no intrinsic value for survival or worldly success. Despite these self-deprecating claims from men a generation apart who devoted their life's work to the study and practice of play, the activities we engage with that lift us "out of real life" seem of critical importance to creative thought. "Great art and great science involve a leap of imagination into a world that is different from the present," writes Mihalyi Csikszentmihalyi, loosely paraphrasing Albert Einstein. "The whole point of art and science is to go beyond what we now consider real, and create a new reality" (Csikszentmihalyi, 1996).

Passage

Who is the third who walks always beside you?
When I count, there are only you and I together
But when I look ahead up the white road
There is always another one walking beside you
Gliding wrapt in a brown mantle, hooded
I do not know whether a man or a woman
– But who is that on the other side of you?

TS Eliot. **What the Thunder Said** (excerpt)
The Waste Land, 1922

Passage is a project about space, time, and presence. It's also a percussion instrument. Inspired by a little-used stairwell in MassArt's Tower building, *Passage* is designed to draw attention to unnoticed spaces, and to memorialize the presence of people in spaces that are infrequently inhabited. Alerted by a visitor's arrival on a selected stretch of stairs, a hidden microphone records the sound of ascending and descending footsteps (which echo with an interesting hollow boom in the metal-and-concrete cylinder of the staircase). When the next visitor arrives, their steps are recorded in turn, while the recording of the previous user's steps also plays. The experience builds over time so that the first visitor hears only her own footsteps, the second hears two sets of steps, the third three, and so on.

Passage was inspired in part by my inaccurate recall of a well-known Christian parable. The story tells of an old man who, as he prepared to enter heaven, relived the scenes of his life as if he was walking in the desert next to God. Sometimes he saw two pairs of footprints in the sand, and sometimes one. The old man explained that sometimes they had walked side by side, but sometimes (in the version I remember, which I think I may have imagined since I can't find reference to it), "Sometimes I carried God, and sometimes he carried me." The T.S. Eliot quote above was not in my mind consciously when I first designed the concept for *Passage*. Coming upon this verse unexpectedly while re-reading *The Waste Land*, I realized that it was this fragment of a much larger poem which had somehow gotten combined in my head with a Christian fable to create my personal myth of God and the Old Man.

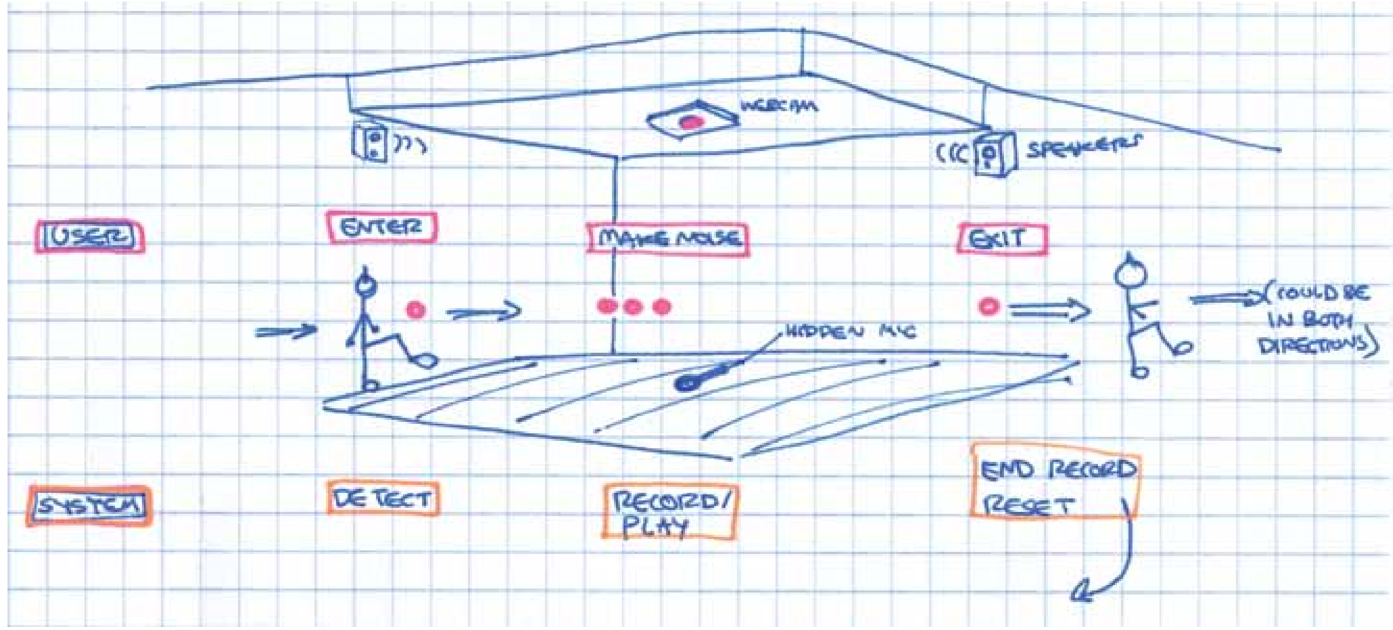
Without a desire to further explore specifically religious overtones, I like the idea that often when we think we are alone, we're not. Our presence is always followed and preceded by the marks and presence of others, even when we don't see them, and their presence shapes the space we inhabit. When a visitor enters *Passage*, I hope that the unexpected sounds of many other invisible footsteps will be somewhat unsettling.

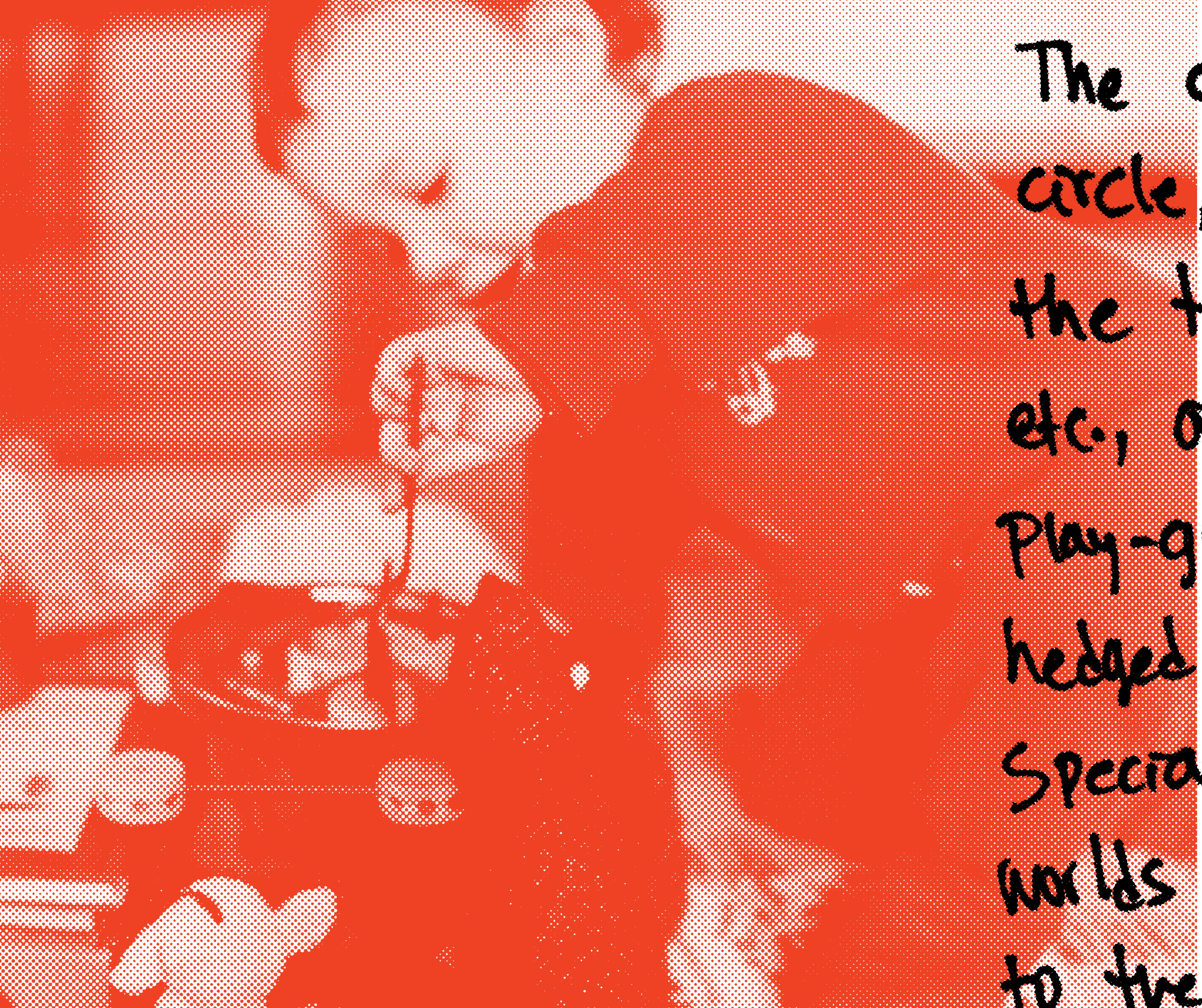
I can't ignore the influence of Christopher Janney's *Soundstair* project (installed in 1978 at the Boston Museum of Science) on the creative process behind *Passage*. Childhood memories of running up and down Janney's staircase, each step triggering a different note on a musical scale, provide the aesthetic and experiential template for nearly all my new project concepts. In particular, the effortlessness of interacting with Janney's piece has provided me with a model for the ideal experience of interaction.

Soundstair plays its musical notes as soon as a visitor steps onto the staircase, responding equally to those who come on purpose to play inside the piece, and those who simply want to climb up to the next floor. Rhythmical jumping around from step to step results in a more intentional, "composed" sound, but a toddler crawling up the staircase can also elicit a pleasing fountain of disorganized noises. Like *Passage* (and also *Dream Sequence*) *Soundstair* is an "invisible" piece — interactions result in sound only, while visually the piece looks like just another unadorned staircase in a public atrium. The surprise of an unexpected response to familiar actions in an unexceptional context is one of the greatest pleasures of *Soundstair*. I hope this will be true for *Passage* as well.



Borrowing technology from *Dream Sequence*, *Passage* uses an overhead webcam and blob-tracking software to monitor the movements of visitors. Sounds are recorded and placed in an array that is triggered to play back (via Max MSP) when the next visitor enters the piece. It is my hope that more "advanced" users will discover how the system works, and will take advantage of the possibility of building up rhythmic patterns by passing through the space more than once. If this compositional phenomenon can be encouraged, visitors will be able to respond directly to the disembodied presence of the people who passed through before them, leaving rhythmical messages for those who come next.





The arena, the card table, the magic circle, the temple, the stage, the screen, the tennis court, the court of justice, etc., are all in form and function play-grounds, i.e. forbidden spots, isolated, hedged round, hallowed, within which special rules obtain. All are temporary worlds within the ordinary world, dedicated to the performance of an act apart.

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JOHAN HUIZINGA, 1950

FURTHER THOUGHTS

In his meditation on the role of play as a defining characteristic of human identity, Johan Huizinga lays out the components of play: “order, tension, movement, change, solemnity, rhythm, rapture” (Huizinga, 1950). The parallels between this language and that of Allan Kaprow, Csikszentmihalyi, Miyamoto, and even Sherry Turkle cannot be ignored. From my own point of view, this convergence of thinking by gamers, performers, scholars, and psychologists suggests that play may be the bridge between creative action and dynamic media.

There is no question that media is as often an alienating, commercializing force as it is an empowering tool to access Huizinga’s “temporary worlds within the ordinary world, dedicated to the performance of an act apart.” Now that we have to a great extent achieved technology of the kind Henri Pousseur was apparently dreaming of when he composed *Scambi*, it is time to put the audience back into a position of collaboration with the authors and designers of media works. Clearly, a “frame,” “limitation,” or an artists’ “handful of ideas” are necessary to give shape to the experience and a context to the final product of these interactions. When these elements are in place, and the system’s creator “keeps shaking” without preconceptions for a final outcome, an audience’s play becomes the serious business of discovering something new.

CONCLUSION?

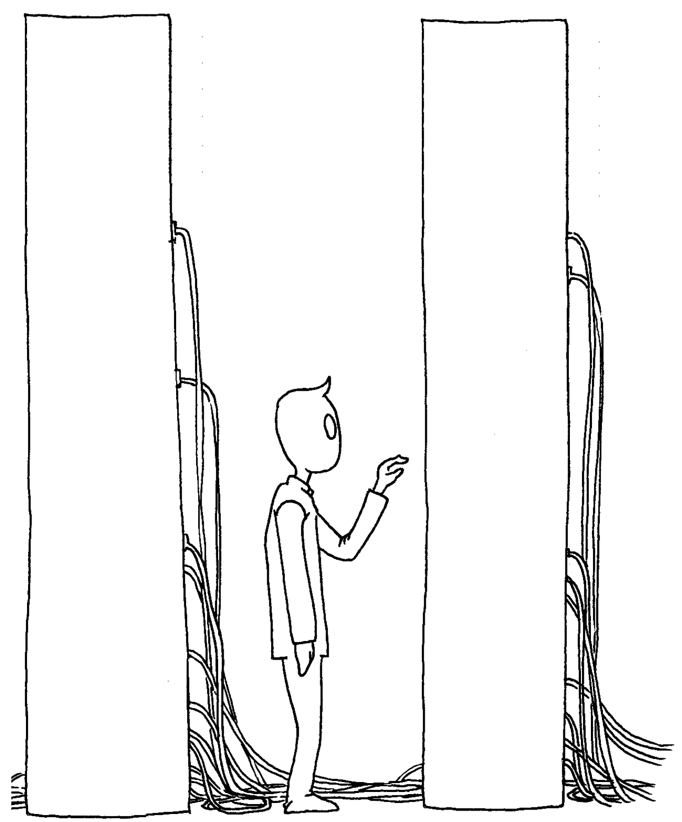
Many things conspired
to tell me the whole Story.
Not only did they touch me,
or my hand touched them:
they were
so close
that they were a part
of my being,
they were so alive with me
that they lived half my life
and will die half my death.

O irrevocable
river
of things:
no one can say
that I loved
only
fish,
or the plants of the jungle and the field,
that I loved
only
those things that leap and climb, desire, and survive.
It's not true:
many things conspired
to tell me the whole story.
Not only did they touch me,
or my hand touched them:
they were
so close
that they were a part
of my being,
they were so alive with me
that they lived half my life
and will die half my death.

PABLO NERUDA, **ODE TO THINGS** (EXCERPT), 1923

When I look back at the work I have made over my last two years at the DMI, the process seems to me like a series of attempted magic tricks. Some did not quite succeed, but those that did (which I have written about here) seem magical to me although, at least in theory, they should hold no further mysteries for their creator. I remain amazed by technology that can gather information from touch, movement, and simple presence, and return a response like a magician pulling a rabbit from a hat. When I observe someone else playing with one of my pieces, stooping close to *Top Secret* to catch a whispered dream story or gingerly stroking the upright hairs of *Whisker Organ* to the sound of my wife's voice singing, the fact of our communication astonishes me. This wonder comes partly from the newness of my mastery of the technical tools of dynamic media, but I think mostly from the excitement of the moment in which I can relinquish control of my completed works and watch from a distance as the input of others transforms my work into something unfamiliar and unexpected.

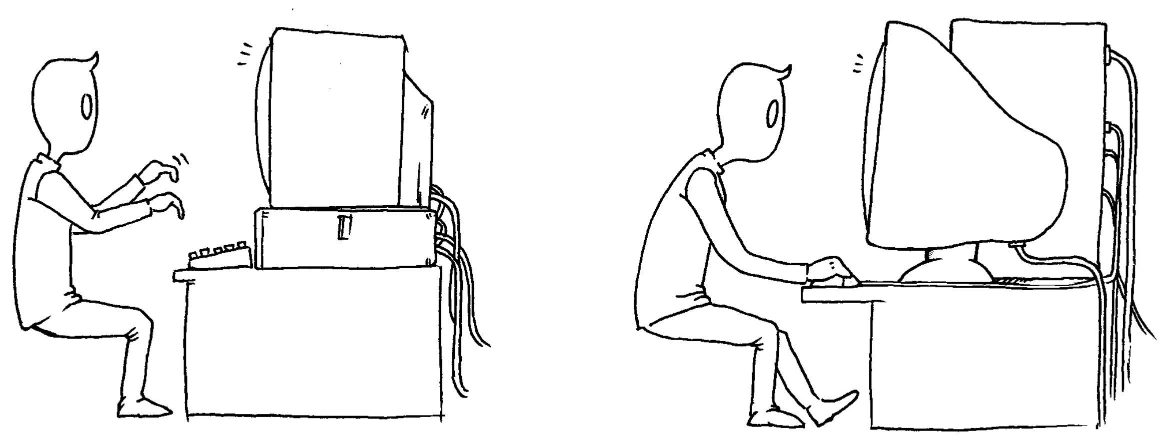
As a creator and consumer of media, I am not motivated to bemoan the negative effect of digital interaction on our traditional analogue lifestyles. It is clear that media have changed our lives, our relationships, and our conception of where we belong and how we identify ourselves. At the same time, as our digital tools become more sophisticated, there is a strong possibility that through this media we may become more aware of the world, our bodies, and the people around us, not less.

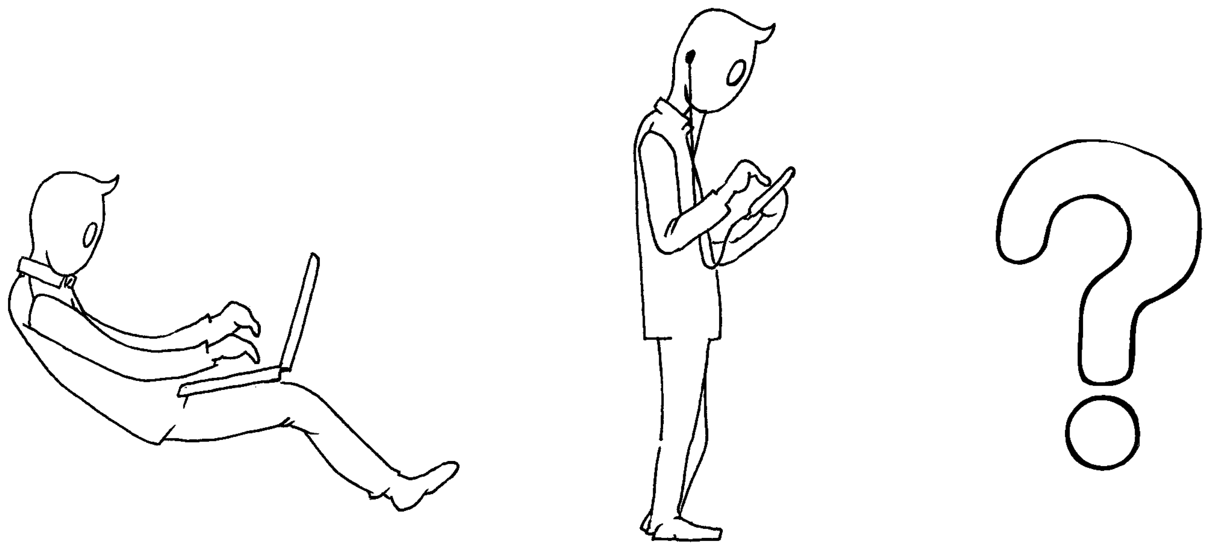


Looking back more than 20 years to my family's first computer, I remember my younger self desk-bound for hours, unconsciously feeling myself afloat inside a two-color dot-matrix world as I wrote school papers and diary entries. I was still tied to the desk in college in the late 1990's, but between papers I was obsessively checking email with an antiquated modem and coding my first HTML pages by hand in a text editor, reaching invisible fingertips across space to touch imaginary hands reaching back. My first laptop changed the scenario to the extent that I was able to undertake all these familiar activities in many different rooms, and eventually even outside the house in progressively less and less formal situations, winding up on a park bench downtown checking email via ambient wifi. Friends and family bought successively smaller and lighter laptops, and eventually the ubiquitous iPhones and iPads that some gleefully predict will replace all paper-based text in a matter of years. Now we check email and type on the subway, at the dinner table, and (inadvisably) with one hand while driving.

We are no longer stationary, tied to our devices — they are tied to us, merging more and more closely with our bodies. Data access happens not through swapping floppy disks and hours of laborious typing, but easily, through a shake of the forearm, a twist of the wrist, stroking fingers on a smooth surface. I watch the people around me surf the web, write to each other, listen to music, and conduct research, and I think I see a huge, communal swaying dance of flicking fingers, elbows thrown out, arms waving. Can I catch hold of the motions of this dance, and make my audience choreographers as well as performers?

Computer History.
Illustration by Yaoming Hao, 2011



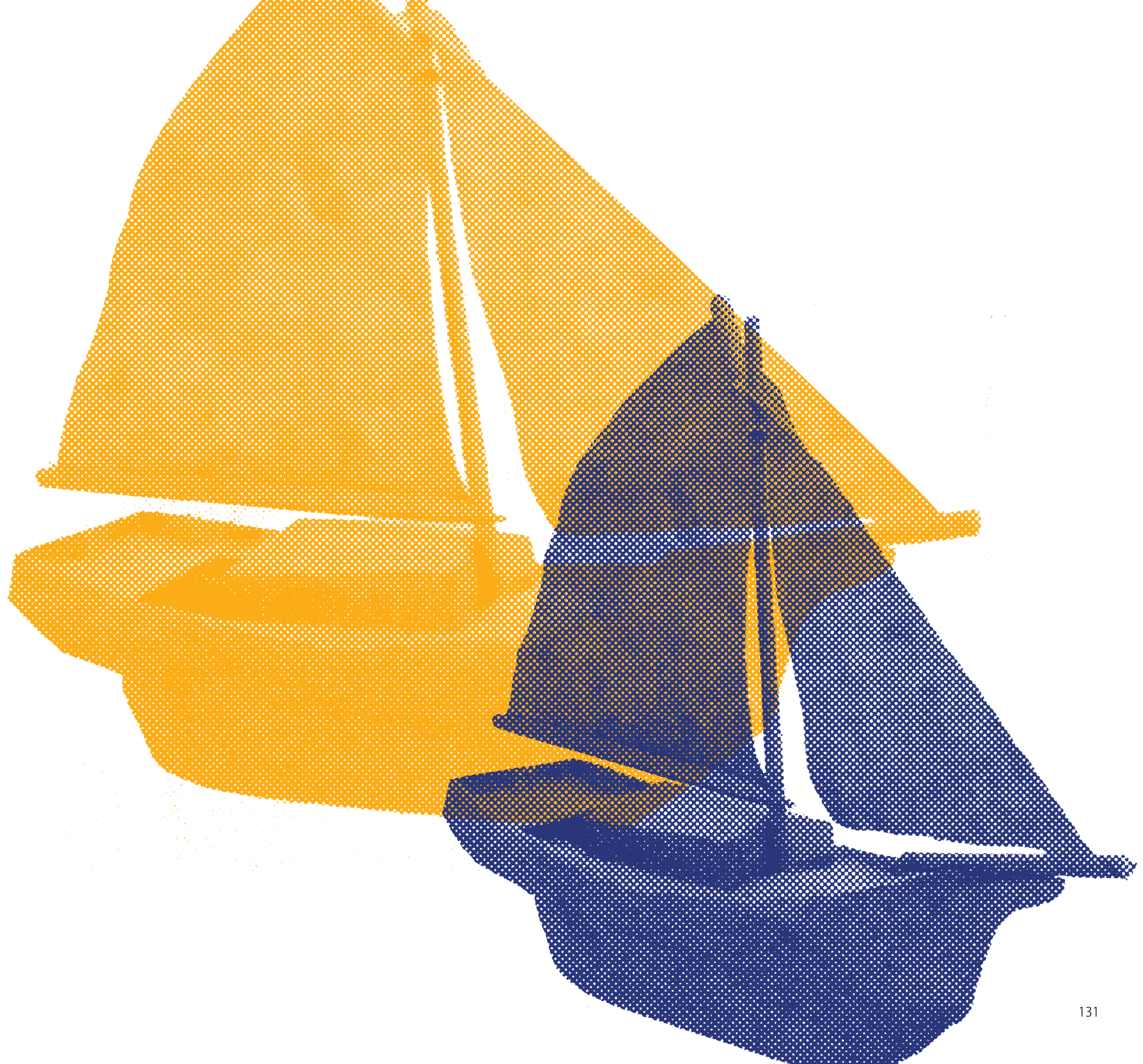


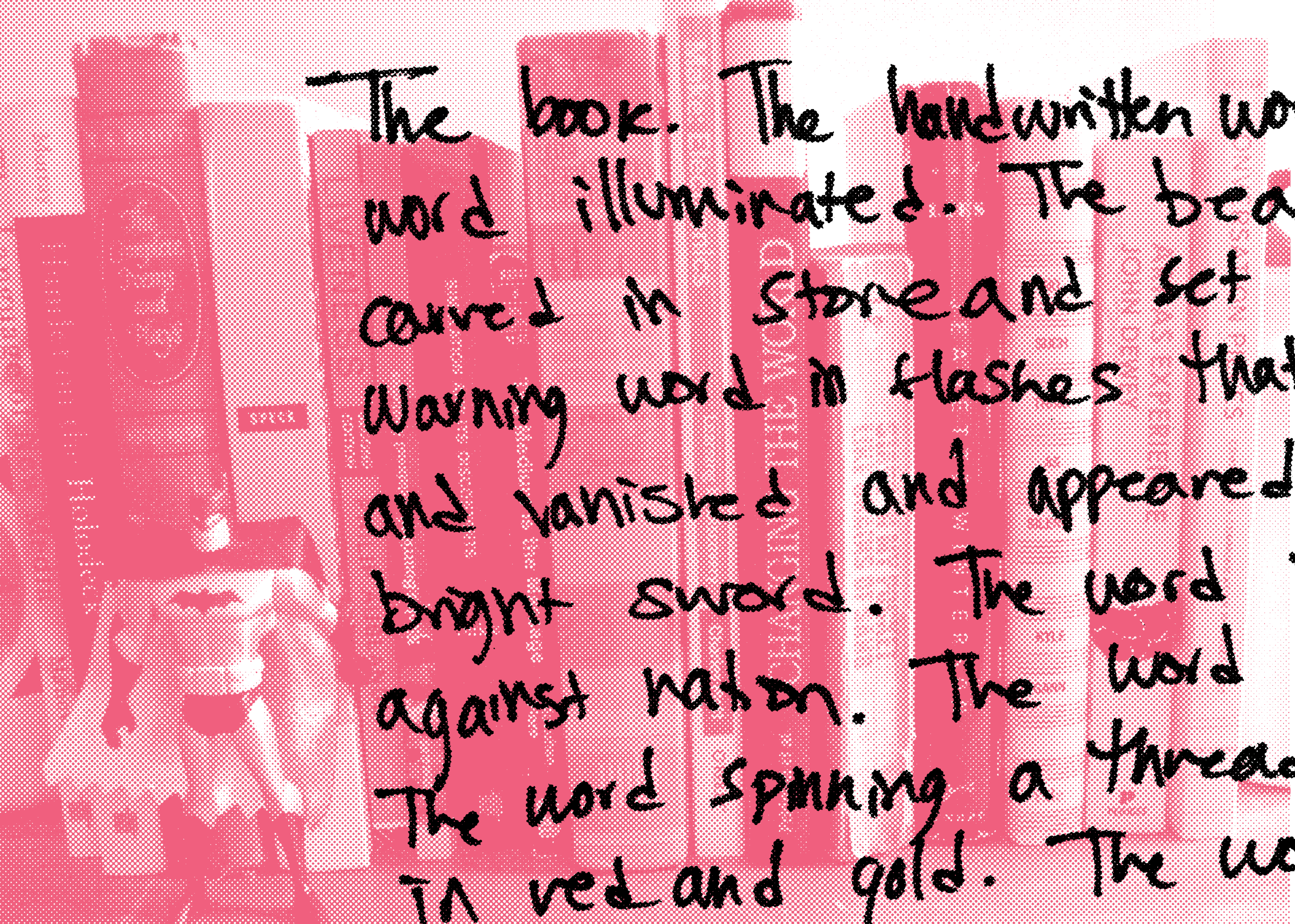
I am interested in media experiences that are intimate, specific, and textural. I don't want an iPad to replace the dog-eared paperbacks that populate my apartment's shelves, not because I object to a digital interface for fiction but because I glory in the detail and uniqueness of my personalized reading experience. Books have a smell, a roughness, a messiness, and a physical delicacy that informs my experience of the stories I read whether I think about it or not. To read a book is to enter into a compact and a relationship with an object, and as there are as many different objects as there are snowflakes, so no two relationships are just the same. Try as we might (and who really wants to try that hard?) we cannot ignore or escape the physicality of the world we inhabit. From text to sex to performance, who wouldn't prefer the version that engages all the senses, the version that "really happened"? This is why I seek not to replace physical experience with a mediatized simulation, but to lay media's responses over the physical world, to imbue obvious and familiar actions with unexpected consequences.

Nicholas Bourriaud and others talk about contemporary performance artists who see their work as a catalyst for new relationships among people, rather than as a machine to produce saleable art objects. From my current vantage point, I see dynamic media moving in a similar direction. Many others have quickly found a way to make this transition a lucrative one — after all, while Facebook and Twitter foster relationships via free communication tools, they live on advertising. In attempting to summarize the very specific findings of my own experiments, the intimacy and unpredictability of the relationships created seem most important. I see myself as an unlikely performer, shy and awkward with others, profoundly uncomfortable facing an unfamiliar audience, and private about my personal life. And yet, as my work takes me deeper and deeper into the recesses of my psyche (my dreams, my body, the voices of my loved ones), my media experiments paradoxically seem to require more and more interaction and input from the audience. Perhaps everyone longs to reveal themselves in this way, perhaps not. I do know that the intimacy of the pieces I made this year and last feels not like an invasion of privacy, but like a natural transition from myself of two years ago, sending emails from a park bench.

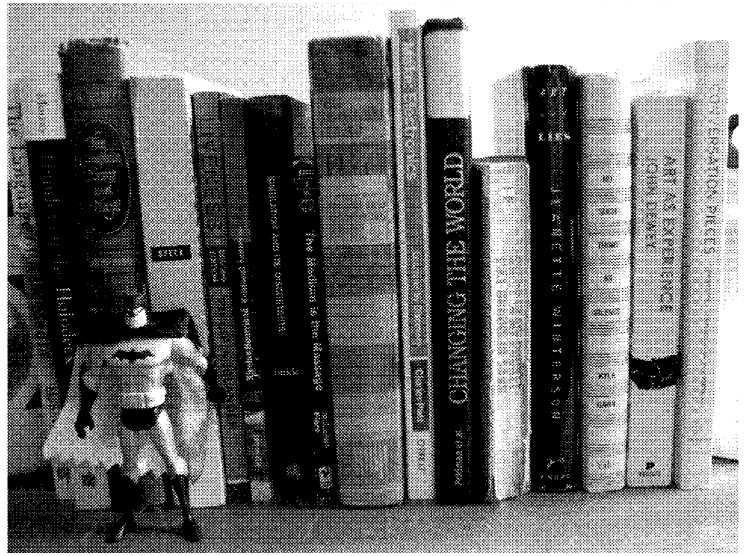
I don't expect the cat's whisker interface to become an industry standard for media access, but I think media users as a species are beginning to long for closeness, specificity of touch and texture, and a creative unpredictability that are not yet present in mainstream digital experiences. We hold our digital devices close, but they offer at best only a semi-believable simulation of previously tactile experience. Reading Jane Austen on an iPad is not a wondrous experience. For that we must run up and down Chris Janney's *Soundstair* at the Boston Museum of Science, laughing as each footstep triggers another note in a strange musical scale.

Walking on the beach, my wife takes my hand and hums a tune under her breath. Months later on the runway at a fashion show the sleeve of touch sensors I wear transmits the same sounds whenever a stranger comes into contact with my body. Both experiences are wondrous, each amplifying the other, one private, one public. The media tools I use allow me not to "share" what I have experienced, but to translate my memories of sound and sensation into an open-ended experience others may enter and interpret as they choose.





The book. The handwritten word. The printed word. The
word illuminated. The beacon word. The word
carved in stone and set above the sea. The
warning word in flashes that appeared and vanished,
and vanished and appeared, cutting the air with a
bright sword. The word that divided nation
against nation. The word that knits up the soul.
The word spinning a thread through time. The word
in red and gold. The word in human form, Divine.



The Book. The handwritten word. The printed word. The word illuminated. The beacon word. The word carved in stone and set above the sea. The warning word in flashes that appeared and vanished and vanished and appeared, cutting the air with a bright sword. The word that divided nation against nation. The word that knits up the soul. The word spinning a thread through time. The word in red and gold. The word in human form, Divine.

JEANETTE WINTERSON, **ART AND LIES** , 1995

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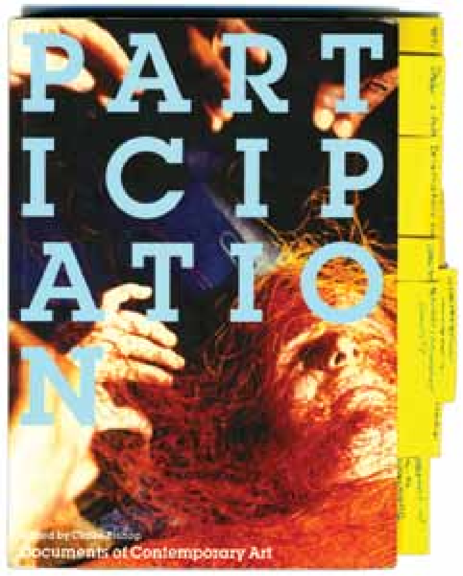

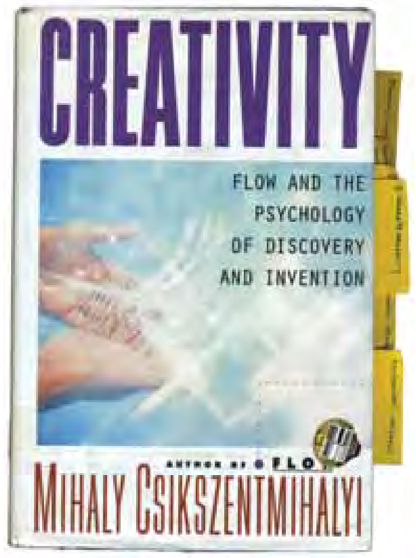

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